Volume VI February, 1943 Number 1

SOCIOMETRY

A Journal of Inter-Personal Relations

A QUARTERLY

SUBSCRIPTION $6.00 YEARLY FOREIGN POSTAGE 75c ADDITIONAL

Make checks payable to Beacon House, Inc.

Published quarterly by Beacon House, Inc., in February, May, August and November. Address all communications to: Sociometry, 101 Park Avenue, New York, N. Y. Re-entered as second-class matter October 22, 1942, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

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ETHNIC CLEAVAGES IN THE SOUTHWEST AS REFLECTED IN TWO HIGH SCHOOLS

Charles P. Loomis [1]
U. S. Department of Agriculture

The following comments of a superintendent of schools in a New Mexico town of 3500 people throw light on various aspects of ethnic cleavages in the Southwest.[2]

"My predecessor discouraged non-English young people from entering High School. I like to think that I am progressive in this respect. In the few years that I have been superintendent here the enrollment of Spanish-speaking students in high school has increased from almost nothing to about 15 percent. In the lowest grades we have about 60 percent Spanish, which progressively decreases as the students approach high school. We have a long way to go, but we have started.

"My new principal comes from Spanish-speaking stock, but is accepted by the Anglos. To him goes most of the credit for the increased Spanish-speaking enrollment in high school, but not all. The athletic coach who was here when I came wouldn't let the Spanish-speaking boys try out for the teams. My new coach is from T____. He is an Anglo but at T____ they play Anglos and Spanish-speaking boys together. In fact, he played on a famous mixed team before he became a coach. Here he encourages the Spanish-speaking boys to turn out. He has discovered some championship material among them and he has raised the status of the Spanish-speaking boys in the whole town."

Reflecting on his administrative difficulties the superintendent continued: "Oh! yes, there are problems. There are

[1] *The field work was completed with a Social Science Research Council grant-in-aid. Acknowledgments are due to Nellie Homes Loomis who administered the questionnaires and Margaret J. Hagood who suggested methods of analysis.*

[2] *The names of the superintendent and the New Mexican city are withheld. The comments concern neither Taos nor Las Cruces, towns which are later discussed in this paper.*

fights, and any Southwestern school administrator knows he has to be on the look-out for friction. A good coach has to be on his guard continuously. Some of our best teams in New Mexico are mixed. You remember the famous Apodoca brothers, the State College forwards?

"The Spanish are real athletes but the more conflicting loyalties you have on a team the harder it is for the coach. I'm convinced that this lay at the basis of L____'s failure to win the State high school basketball championship two years ago. The team suddenly went flat at the tournament. It was a mixed team and the coach told me afterwards he didn't know what was wrong until after the game. They say one of the Anglo players had been 'making passes' at a Spanish boy's girl." [3]

General Basis for Anglo-Spanish Cleavages

In the Southwest in the States of Arizona, California, Colorado, New Mexico, and Texas live approximately 1½ million people whose mother tongue is Spanish. This is only about 10 percent of the population of these States but in some New Mexican counties such as Taos, Rio Arriba, and Mora over 90 percent of the population is Spanish-speaking. In the five States just mentioned live 90 percent of the people of Spanish-mother tongue who were born in the United States. In the past the problem of cleavages between people of Spanish-mother tongue and Anglos has been essentially a Southwestern problem.

Of course, the cleavages have their roots in the past. There is not space here to relate the historical development of these, but suffice it to say that once the Spanish-speaking people were in control of the territory in the Southwest. By conquering and reconquering and defending the areas once controlled by the Indians they earned their rights to the territories awarded to them in grants made by the Spanish and Mexican governments. How they lost control of most of the land they once farmed and grazed

[3] *In the Southwest Anglos usually refer to people of Spanish-mother tongue as "Mexicans." This is considered by the Spanish-speaking people to be disparaging. It is as disparaging as the Anglos consider the term "Gringos" which is sometimes applied to Anglos by Spanish-speaking people and is not so disparaging as "Greasers," a term used mostly by Anglos of lower social status.*

has been told elsewhere. [4] How they came to furnish a considerable portion of the common labor for the Southwestern and Mountain States is well known [5] and their great contribution to the present

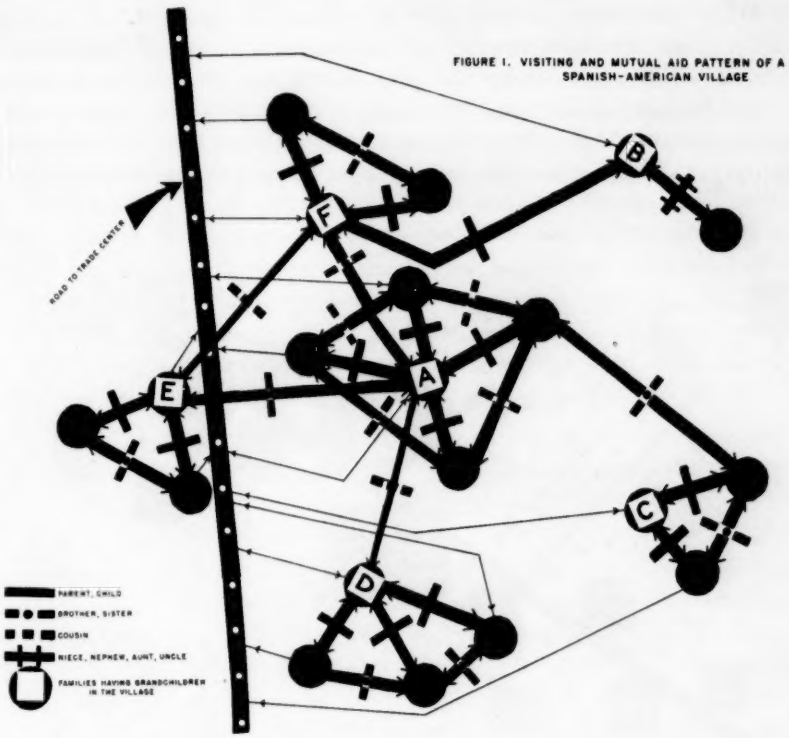


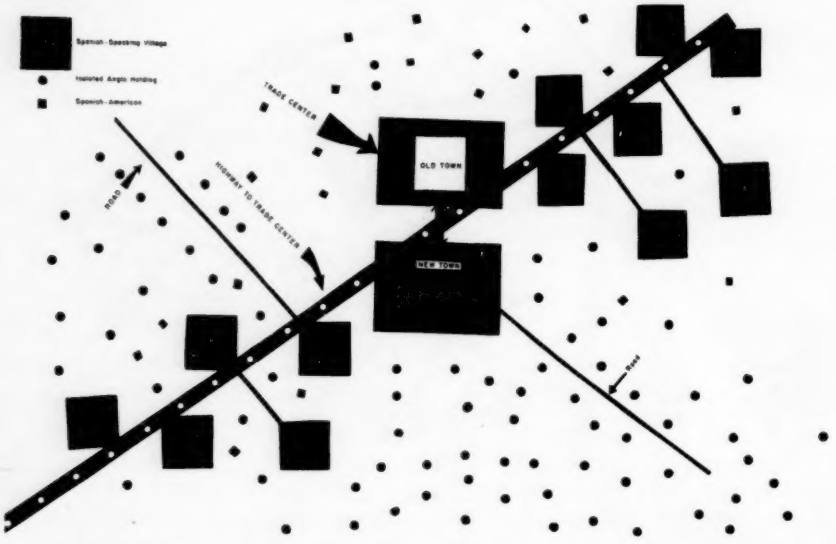
FIGURE 1. VISITING AND MUTUAL AID PATTERN OF A SPANISH-AMERICAN VILLAGE

[4] *G. I. Sanchez, Forgotten People, Albuquerque, New Mexico: University of New Mexico Press, 1940. See also Notes on Community-Owned Land Grants in New Mexico, Soil Conservation Service, USDA, Regional Bulletin No. 48. Albuquerque, Aug. 1937.*

[5] *Olen Leonard and Charles P. Loomis, Culture of a Contemporary Rural Community, El Cerrito, New Mexico, Rural Life Studies No. 1, Bureau of Agricultural Economics, U. S. Dept. Agr., Nov. 1941; Charles P. Loomis and Olen Leonard, Standards of Living in an Indian-Mexican Village and on a Reclamation Project, U. S. Dept. Agr. Social Research Dept. XIV (Aug. 1938); Village Dependence on Migratory Labor in the Upper Rio Grande Area, Soil Conservation, Southwest Region, U. S. Dept. Agr., Regional Bul. No. 47, Conservation Economics, Series No. 20 (July 1937). (Also see other publications in this latter series.)*

war effort has also been recorded.[6] Of course, a proud people such as the Spanish-Americans in the Southwest, knowing that they have already been or are being forced from a superior to a subordinate position, may be expected to harbor resentment. On the other hand conquerors, whether winning an economic or armed conflict, seldom elevate the vanquished to higher or even equal position with themselves. In this the Anglos are no exception. In Texas, where armed conflict took place and where Anglos were accustomed to a caste line drawn between themselves and Negroes, the cleavages have perhaps always been greater than elsewhere.[7]

FIGURE 2. TYPICAL SOUTHWESTERN TRADE CENTER



[6] *Charles P. Loomis, "Wartime Migration from the Rural Spanish-speaking Villages of New Mexico," Rural Sociology Vol. 7., No. 4., Dec. 1942. Also see Charles P. and Nellie Loomis, "Skilled Spanish-American War Industry Workers from New Mexico," forthcoming issue of Applied Anthropology.*

[7] *Paul S. Taylor, Mexican Labor in the United States, University of California Press, Berkeley. See whole series. See also, An American-Mexican Frontier, Nueces County, Texas. University of North Carolina Press, Chapel Hill, 1934. The inscriptions in the Alamo should help the non-Texan to understand the sentiment behind this cleavage. Also see Anna J. Pennybacker, The History of Texas For Schools, Published by the author, Austin, 1924.*

Differences In Cleavages As Related To Numerical Strength Of The Ethnic Groups

Other things being equal, in the counties of New Mexico where people of Spanish-mother tongue are in majority and where these people have retained relatively more of their political and economic control there is less resentment toward the intruding Anglos. Obviously there are many factors other than mere numbers which determine cleavages. However, the analysis which follows compares the cleavages in high schools in which the population factor is an important differential. In one high school and the area from which its students come the Anglos are in the majority, in the other they are in the minority. Before this analysis is presented, however, the ecological pattern of the Southwestern town and its environment will be considered in order that the reader may appreciate the significance of high school cleavages as reflecting cultural cleavages in the Southwest.

Ecology of Southwestern Towns and Its Relation to the High Schools

In the Spanish-speaking villages of the Southwest the "larger family," including the family units of grandparents and their children and their families, is the fundamental unit.[8] The larger families are bound to other larger families by kinship ties, even though factions frequently exist in these villages. Figure 1 describes mutual aid and visiting in a small village without a faction. Each circle represents a family. The lines between the circles represent the frequency of contacts between the families in terms of visits or definite mutual aid such as exchange of farm implements and labor. The infrequent contacts are omitted from the diagram. It should be noted that this simplified typical pattern does not differ greatly from that of Spanish-American villages actually studied.[9] The patriarchs, A, B, C, D, E and F, are the leaders but their personality characteristics determine who among them will initiate action in the village. Figure 1 is designed to indicate the role kinship bonds

[8] *Charles P. Loomis "Informal Groupings in a Spanish-American Village," Sociometry, IV, 1, 36-51, Feb. 1941.*

[9] *Olen Leonard and Charles P. Loomis, op. cit.*

play in the Spanish-American villages. [10] The grandparent designated as A is the leader in most affairs of the village. A village with two factions will have two such clusters with little mutual aid and much friction going on between the two groups. Most of the members of a given faction will have some degree of relationship by blood to most other members of the same faction. Interrelationships with the opposing factions, as in most such feud situations, are frowned upon and kept at a minimum. It should be obvious that communications between families within a given faction in such a village situation is very rapid. A politician wants to put on a dance and fiesta. He need merely let it be known to the leaders and the message goes over the grapevine in no time. The same holds true for information concerning misfortune or an insult from the other faction or from another village or, indeed, from Anglos.

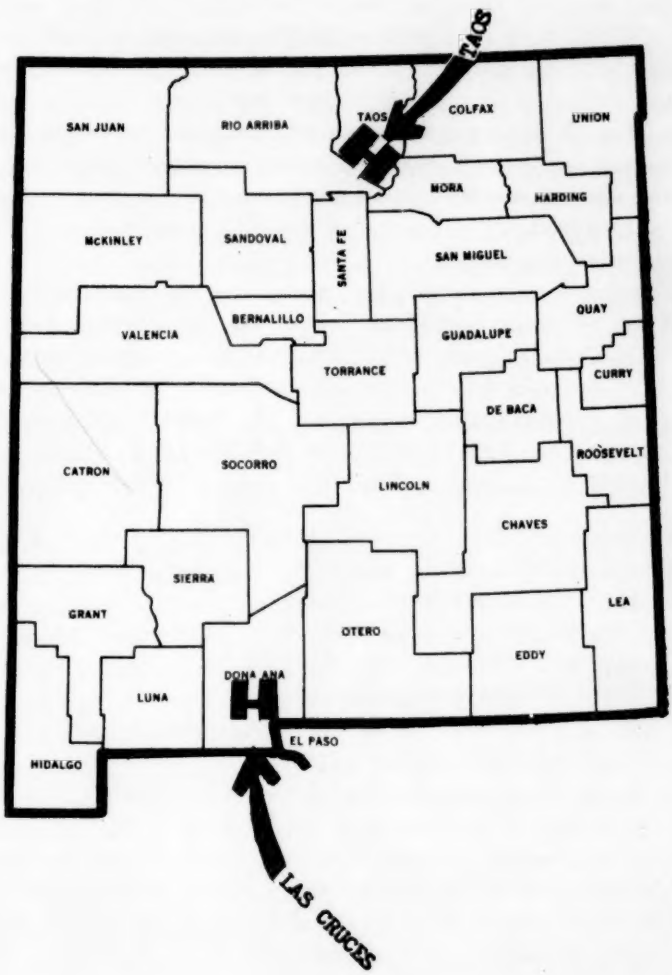
The significance of these networks of relationships as related to high school will perhaps become clearer when Figure 1 is substituted in each of the black squares in Figure 2. Few rural villages have high schools; but, as it will later appear, the villages are tied to the towns through kinship and trade ties. Directly or indirectly they furnish the students for the high schools in the towns by furnishing the population to the latter which in turn services the villages with consumers' goods. An attempt has been made to describe these ties in a graphical presentation of a more or less typical trade center and its environs. (See Figure 2.) Practically all trade center towns (Plazas) in the Spanish-American sections of the Southwest, as described in Figure 2, service a number of smaller Spanish-speaking villages

[10] *For a comparable figure of an actual Anglo neighborhood with its relatively few kinship ties see Charles P. Loomis and Douglas Ensminger, "Governmental Administration and Informal Local Groups," Applied Anthropology, Vol. I, No. 2. In the Spanish-speaking villages it is not uncommon to find that from 90 to 100 percent of the people who visit one another, exchange work and "borrow back and forth," are related by blood ties, but studies have shown that it is uncommon for more than one-third such associates among Anglos in the Southwest to be so related. For data comparing different parts of the country, see Charles P. Loomis, "Social Relationships and Institutions in Seven New Rural Communities," op. cit., p. 33. The following chart of an Anglo neighborhood in the East is comparable to the Southwestern Anglo pattern.*

(Placitas), described in Figure 1. Some Spanish-speaking people and most Anglos live on isolated holdings, but the typical form of Spanish settlement throughout the world is the village or town with its plaza. Large villages have a church, a school, a post office and various stores. Smaller villages may have no stores and the smallest, no post-office or church. One priest may serve several small villages. Men frequent the trade centers, but women and children go less often.

If, again, the reader thinks of the network of relationships,

FIGURE 3. LOCATIONS OF HIGH SCHOOLS STUDIED



such as that described in Figure 1 as being substituted for each of the squares representing Spanish-American villages in Figure 2, the complexity of the net of rural-urban relationships in the Southwest may become apparent. Most Southwest towns of Anglos and Spanish-Americans are divided into "old" and "new" towns. In old town itself live many groups such as those represented in Figure 1. These all have their roots in the villages; that is, all have close kinship ties there. This peculiar town-country arrangement is an important factor in the understanding of cleavages. Even a Spanish-speaking candidate for a town office may feel required to entertain the rural villages with fiestas, drinks and dances. He does this knowing that, although the villagers cannot vote for the town office, they do have kin in the old town who can vote. A local Spanish-American store may thrive in proportion to the relatives the family of the proprietor and clerks have in the villages. Anglos dominate the economic life of the trade centers only because their background includes values and traditions of business and commerce which developed while the Spanish-Americans were isolated. A minority of Anglos finds it more difficult to dominate politics.

The pattern of trade centers, including the division of the towns and the services supplied between the Old Spanish-American and New Anglo-Town, differs in different areas. Sometimes the division applies only to residential sections. Frequently banks, chain stores, Protestant churches, and the largest and newest offices, stores, and buildings are in New Town. [11] Almost always the high school is located in New Town and it is seldom that a

[11] *At present army camps near these towns create real problems. Soldiers in uniform near one town, the name of which is not mentioned in the present report, although constantly seen on the streets of New Town are not permitted to enter Old Town without special permission. Here is fertile soil for cultural conflict. The different position of females in the two groups may lie at the root of the conflict. Among the Spanish-Americans, the girls are "protected" and the double standard prevails. If Anglo soldiers should accost Spanish-American girls they would not necessarily be deviating from male standards for the Spanish-Americans. They would get into trouble, however, because the Spanish-American girls are "protected." In such cities as El Paso where such restrictions of soldiers are not great, new cultural conflicts are brewing.*

significant portion of the high school teaching staff are non-Anglo or live in Old Town. [12] Although only a very small proportion of the children of Spanish-mother tongue ever attend high school, the cleavages which exist in high school student bodies are particularly significant indices of the relationship of both groups. The Spanish-speaking students who attend high school either are attempting to retain their present status in the face of strong Anglo competition or are attempting to climb. Their attitudes in this situation as well as the attitudes of the dominant Anglo group are significant.

Trade Centers of the High Schools Studied

The two New Mexican high schools from which cleavage data were gathered for the present report are located in agricultural trade centers (see Figure 3). The high schools located in Taos and Las Cruces, towns with populations of 965 and 3,608 respectively, were chosen because of their different ethnic compositions. At Taos High School, located in Northern New Mexico, slightly less than one-fourth of the students were Anglos, whereas at Las Cruces in the Southern part of the State almost two-thirds [13] were Anglos. [14] In the highly commercial farming areas of the Mesilla Valley on the Rio Grande where Las Cruces is located the Spanish-speaking people have lost more of their agricultural

[12] *In El Paso, Texas the largest of all Spanish-American high schools, which ironically enough bears the name of the famous Mexican fighter, Bowie, is located in the Non-Anglo section.*

[13] *Name and language spoken most frequently at home were used as the basis for classification of the two ethnic groups.*

[14] *In Taos the existence of an artists' colony might have influenced relationships and attitudes. However, relatively few of the students were related to the artists. Another factor making the two towns different is the presence of the large Indian Village near Taos. Anglo tourists and artists may have greater appreciation for Indian and Spanish culture than do the Anglos at Las Cruces. The study, however, does not indicate that such influences were at work in the high school student body. The Indian-Mexican village of Tortugas near Las Cruces brings no group of tourists and artists. For a discussion of this village see Leonard and Loomis, op. cit. The best recent description of Taos County is to be found in George Sanchez, op. cit.*

holdings than in Taos County but many leading citizens both in the city and on the farms of the surrounding valley are Spanish-speaking. [15]

The Data Used in Measuring Cleavages [16]

Cleavages have been a frequent subject of study. However, in particular Criswell's penetrating study of cleavages and in general the early work of Moreno and Jennings approach the problem along the same lines as it is approached in this paper. [17]

Each student wrote out as many as five names on a blank headed: "Write in names of boys or girls you pal or play with most at school." After each of these names, age and grade data and a "yes" or a "no" answer to the question "is he or she related to you?" was inserted by the student. Data resulting from this operation were taken as indicative of in-school cleavages.

Responses to another request for "Names of boys or girls you pal or play with most Saturday, Sunday and school holidays," excepting brothers and sisters, resulted in data used as a basis for measurement of cleavages in out-of-school activities. The analysis of names of the families which visited at the homes of the children and most often took meals with them often gave further indication of cleavages in the towns. The technique of the beauty contest to indicate prejudice was also used. All students

[15] *See Sigurd Johansen, "Rural Social Organization in a Spanish-American Culture Area," unpublished Ph. D. thesis, University of Wisconsin.*

[16] *See questionnaire at the end of this article.*

[17] *See J. L. Moreno and H. H. Jennings, "Advances in Sociometric Technique," Sociometric Review, 1936, and later articles in Sociometry, Vol. I, No. 1-4, 1937-1938. A very good summary of these studies is to be found in Joan Henning Criswell's Sociometric Study of Race Cleavage in the Classroom, Columbia University, Archives of Psychology, No. 235, New York, January 1939. The indices of cleavages in the present study were in many cases greater than those found by Criswell (op.cit.) to exist between Negroes and Whites in New York City grade schools. Criswell did not use actual associations but choices for seat partners as the basis for her indices of cleavages and used a technique of analysis closely related to the present analysis.*

chose the best looking boy and best looking girl in their respective classes.

Such verification as was made by the teachers indicated that answers accurately reflected the cleavages between the two ethnic groups. In no case were students informed that the data were to be used to study cleavages. They were told that the investigators recognized the importance of friendship groups in the development of personality and wanted to study such groupings in various parts of the country.

Measuring the Cleavages

Basic to the analysis of the cleavages was the comparison of the reported associations with "expected" or "chance" values. These latter are based upon calculations which classified the total number of associations in accordance with what would have been the case if the number of associations of each ethnic group had been the same as reported, if the number of other individuals involved in the associations had been the same as reported for each ethnic group, but if only chance has operated to determine the pairings in the associations. For each section of the investigation a "ratio of self-preference" for each group was computed. This was derived as indicated in Table 1.

Cleavages between the two ethnic groups in the two high schools as measured by the various criteria are in all cases highly significant. Ethnic characteristics are extremely important determining factors in choice of associates in the Southwest. [17]

The example of the "in-school associations" at Taos High School may be taken as a basis for the explanation of the method of analysis. (See Table 1.) The English-speaking students reported 136 associations, of which 108 were with English-speaking students and 28 with Spanish-speaking students. Now if these associations involved no factor of cleavage these same English-speaking students would have reported associations with 98 Spanish-speaking students and 38 English-speaking students. [18]

The ratio of the observed associations of English students with English students to the chance or expected value of this is 2.84 i.e., 108/38. The corresponding ratio of observed association of English students with Spanish students to the chance or expected value of this is .29 i.e., 28/98. Thus we may say that the ratio of actual to expected associations of (or choices to)

[18] *In this study the following simple method of deriving the expected (Non-cleavage) associations was used. Note the observed frequency in the following table: Taking the case of the in-school associations for Taos and assuming that the probability that the chosen is Spanish is 348/485 and that the chosen is English is 137/485, and assuming that the probability that the chooser is Spanish is 349/485 and that the chooser is English is 136/485, the expected (or non-cleavage) frequencies shown below in the bottom part of the table were obtained. Thus the number of expected choices which English-speaking students will make to Spanish-speaking students is* $\frac{136}{485} \times \frac{348}{485} \times 485 = 98$.

1. *Observed frequencies* — *Language spoken by person chosen.*

Language spoken by person choosing	*Spanish*	*English*	*Total*
English	28	108	136
Spanish	320	29	349
Total	348	137	485

2. *Expected (non-cleavage) or chance frequencies*

English	98	38	136
Spanish	250	99	349
Total	348	137	485

The Chi-square test of the significance of the differences in the observed and expected frequency tables was made directly from the above table of observed frequencies as follows:

$$\text{Chi-square} = \frac{(320 \times 108 - 28 \times 29)^2 \times 485}{348 \times 137 \times 349 \times 136} = 244.10$$

See Margaret J. Hagood, Statistics for Sociologists, Reynal and Hitchcock, Inc. New York, 1941, p. 511. In this study it was not deemed necessary to take into account the fact that at any given choice a chooser could not choose himself, a restriction usually imposed with smaller groups. Such a restriction would slightly increase the measures of cleavages and the differences stressed in the article. See Charles P. Loomis, "Social Relationship Institutions in Seven New Rural Communities," USDA Social Research Report No. XVIII.

TABLE 1. SCHOOL AND OUT-OF-SCHOOL ASSOCIATIONS* OF STUDENTS OF SPANISH AND ENGLISH MOTHER TONGUES AND INDICES OF CLEAVAGES BETWEEN THESE TWO GROUPS, LAS CRUCES AND TAOS, NEW MEXICO HIGH SCHOOLS AND SAMPLE LAS CRUCES GRADE SCHOOL AND EL PASO HIGH SCHOOL GROUPS, 1942.

Type of association	No. of students with English mother tongue	No. of students with Spanish mother tongue	Percent of students with English mother tongue	Total No. associations reported by English speaking students	Expected No. associations with English speaking students	Actual No. associations with English speaking students	Ratio of actual English with English associations to expected English with English associations	Ratio of actual English with Spanish to expected English with Spanish	Ratio of preference of English for English students	No. total associations reported by Spanish speaking students	Expected No. associations of Spanish with Spanish speaking students	Actual No. associations of Spanish with Spanish speaking students	Ratio of actual Spanish with Spanish associations to expected Spanish with Spanish associations	Ratio of actual Spanish with English associations to expected Spanish with English associations	Ratio of preference of Spanish for Spanish students	Measures of significance of differences between tables of observed and expected frequencies with indication of: Language as determinant of choice by person "choosing" and person "chosen." a/		Difference in language groups in choices outside the language group b/	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
I In school associations																			
Taos High School	30	101	22.9	136	38	108	2.84	.89	9.79	349	250	320	1.28	.29	4.41	244	<.001	13.76	<.001
Las Cruces High School	111	61	64.5	288	171	261	1.53	.23	6.65	188	77	167	2.17	.19	11.42	297	<.001	.40	>.02
El Paso High School (sample)**	24	9	72.7	107	78	102	1.31	.17	7.71	36	10	34	3.40	.08	42.50	109	<.001	.05	>.98
Las Cruces 3rd and 4th grades***	30	18	62.5	126	80	103	1.29	.50	2.58	77	27	50	1.85	.54	3.43	45	<.001	7.28	>.001 <.01
II Out of school associations																			
Taos High School	30	101	22.9	137	31	93	3.00	.42	7.14	450	332	394	1.19	.37	3.22	809	<.001	48.34	<.001
Las Cruces High School	111	61	64.5	416	262	376	1.44	.26	5.54	212	78	192	2.46	.15	16.40	395	<.001	.01	>.99
El Paso High School (sample)**	24	9	72.7	98	73	92	1.26	.24	5.25	33	8	27	3.38	.24	14.08	75	<.001	4.31	>.02 <.05
Las Cruces 3rd and 4th grades***	30	18	62.5	89	52	85	1.63	.11	14.82	70	30	64	2.13	.35	6.09	121	<.001	1.11	>.10 <.30
III Families dining out at another home																			
Taos High School	30	101	22.9	65	14	51	3.64	.27	13.48	281	188	225	1.20	.30	4.00	154	<.001	12.85	<.001
Las Cruces High School	111	61	64.5	75	112	166	1.48	.14	10.57	100	36	90	2.50	.16	15.62	199	<.001	2.34	>.05 <.10
El Paso High School (sample)**	24	9	72.7	69	49	69	1.33	-	-	23	6	22	3.67	.06	61.17	83	<.001	2.86	>.05 <.10
Las Cruces 3rd and 4th grades****	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* To make this table comparable with that of Criswell op. cit. and most sociometric studies "choice to" should be substituted for "association with." Such a comparison is possible because not all reported associations are mutual. For example in this table if student x reported that y associated with him this does not mean that in all cases y reported that x associated with him. In Las Cruces High School among reported in-school associations only 55 percent were mutual.

** One sophomore class.

*** MacArthur grade school. **** No data available

a/ See footnote 18/ for construction of these tables and the computation of the Chi-square measures of significance of the differences between the observed and expected frequency tables. The P's are derived from the Chi-square values.

b/ See footnote 19/ for construction of these tables and the computation of the Chi-square measures of significance of the differences between the observed and expected frequency tables. The P's are derived from the Chi-square values.

English-speaking students to English-speaking students in Taos High School as illustrated by the in-school associations is 9.79 times greater than the ratio of actual to expected associations of (or choices to) English-speaking for Spanish-speaking students as indicated by the same criteria (2.84/.29). Thus the ratio of preference of English-speaking students for English-speaking students (Index of self-preference) in their in-school associations is 9.79. The corresponding index of self-preference of Spanish-speaking students at Taos is only 4.41 (Table 1).

However, like all values being compared these ratios must be submitted to some test of significance before they are judged to be significant for generalization from the sample to a universe. To determine whether there were significant differences in the tendencies within the two language groups to associate with persons outside their own groups, actual and expected frequency tables indicating the differences between the language groups in choosing outside their language groups were constructed. [19] In the case of the Taos High School in-school associations the Chi-square test for the difference between these two tables rendered a value of 14.226. The probability of obtaining such a value of Chi-square is less than .001 if there were no true differences

[19] *These tables were constructed as above indicated. Taking the Taos High School in-school associations as an example we may use the following tables to demonstrate the process.*

1. *Observed frequencies* — *Language spoken by person chosen.*

Language spoken by person choosing	*Same as Chooser*	*Different from Chooser*	*Total*
English	108	28	136
Spanish	320	29	349
Total	428	57	485

2. *Expected (non-cleavage) or chance frequencies*

English	120	16	136
Spanish	308	41	349
Total	428	57	485

The chi-square test for the significance of the difference between these two tables was computed as in the footnote preceding.

$$\text{Chi-square} = \frac{(320 \times 28 - 108 \times 29)^2 \times 485}{428 \times 57 \times 349 \times 136} = 14.226$$

See Hagood, op.cit. p. 511

between the language groups with respect to choosing outside their groups. Chance variation alone would produce such differences between the tables of expected and actual values less than once in a thousand times. The differences are obviously significant and since the ratio of "self-preference" of English-speaking students is greater than that for the Spanish-speaking students we may assume that the English-speaking students choose Spanish-speaking associates less frequently than Spanish-speaking students choose English-speaking students for associates. We may thus say that the English have more in-group tendencies than do the Spanish-speaking students at Taos. As the ratios of self-preference, the Chi-squares, and the probability values in Table 1 indicate, this holds for both in-school and out-of-school associations. Only 23 percent of the students at Taos High School were Anglos. Thus the Anglos there were a minority group and in their associations rejected Spanish-Americans relatively more frequently than the Spanish-Americans rejected the Anglos.

Apparently the opposite is true for actual associations at Las Cruces High School if we take the ratios of self-preference in Table 1 as the significant measures. However, the Chi-square values in columns 16 and 18 indicate that the Spanish-speaking students in the Las Cruces High School do not reject the English-speaking students frequently enough, other things being equal, to enable us to establish the hypothesis that under similar conditions in the larger universe English-speaking students reject Spanish-speaking students less frequently than Spanish-speaking students reject English-speaking students. We cannot with the data at hand establish the thesis that regardless of the language, majority groups are more tolerant of minority groups than minority groups are of majority groups.[29] Nevertheless, this was the tendency at Taos High School, where the English-speaking groups were in the minority, and at Las Cruces High School, where the Spanish-speaking group was in the minority.

Unfortunately, cleavage data were not obtained from which to calculate cleavage scores for the lower grades in Taos and Las Cruces. Such data would make it possible to generalize concerning the relation of age to ethnic prejudices. One small sample of grade school children in Las Cruces was studied. The cleavage measures included in Table 1, with one exception, support the general theory that cleavages increase as the students progress through school. Also included in Table 1 are cleavage measures for a small group of El Paso High School sophomores. These

measures, like all the others, support the thesis that cleavages are great in the Southwest. Neither the Las Cruces grade school nor the El Paso High School scores which measured the significance of differences between the two groups' tendencies to choose outside their own ethnic groups were of such nature as to warrant the generalizations that in the universe differences would be significant. In the El Paso High School sample the ratio of self-preference indicates that the Spanish-speaking students, many of whom are from Mexico, are "more to themselves" than the Anglos even though, for the class, the Anglos were in the minority. However, the sample is small and El Paso, a border town with three large high schools having very different proportions of Spanish-speaking students, offers a complicated situation. The data are included because they were available and could be used to test the hypothesis that cleavages in the Southwest are great.

Kinship Among the Associates

Almost every child in typical Spanish-American villages is related by some degree of kinship with the other children in the school. Figure 1 describes a situation in which all of the children would be related. As previously stated, kinship among Anglos in the rural Southwest is less common. [21] Of course, kinship ties develop when families have lived together for generations and the majority of Anglo families are more mobile and have lived in the communities shorter periods of time. Johansen

[20] *Even if all the measures of cleavage in this study pointed to the conclusion that, other things being equal, the minority group rejected the majority relatively more frequently than the majority group rejected the minority group, this would, of course, not prove that the greater the majority the more prone the minority group would be to reject majority members. See P. Sorokin, "The Principle of Limits," in Publications of the Sociological Society of America, Vol. XXVI (1932), No. 3. Criswell op.cit. undertakes to measure cleavages with different sizes of minorities and tests statistically Moreno's concept of the "saturation point" for a given racial or ethnic group, as discussed in his "Who Shall Survive?" (Nervous and Mental Disease Publishing Co., Washington, D.C., 1934). See also J.H. Criswell, "The Saturation Point as a Sociometric Concept," Sociometry, Vol. V (1942), No. 2, pp. 146-150.*

[21] *See footnote 10.*

found that 79 percent of Spanish-Americans in the villages of the trade center of Las Cruces, as compared with 10 percent of the Anglos, had been born in Doña Ana County. [22] In Taos County where residences of the village population are even more stable, the proportion of Spanish-Americans born in the county is almost certain to be greater. Kinship ties exist less frequently among the people who associate in the trade center (Figure 2) than in the villages. It would be strange, therefore, if many of the children in the high schools in Las Cruces and Taos were kin.

As would be expected, kinship played a greater role in associations of the Spanish-speaking children than among the Anglos. At Taos High School 12 percent of the in-school associations reported by Spanish-speaking children were between kin as compared with 2.3 for the Anglos. At Las Cruces these percentages were 3 and 1, respectively. As would be expected, the out-of-school associations are more frequently among relatives. At Taos High School 18 percent of the out of school associations reported by the Spanish-speaking students were between kin and 4 percent for Anglos. Comparable percentages for Las Cruces were 9 and 5.

The "Beauty Contest" as an Indication of Cleavages

In Taos and Las Cruces High Schools, the boys and girls in the upper three classes each chose the "best looking boy" and "best looking girl" in his or her class. This phase of the investigation was less subject to verification than the actual associations. However, the choices were analyzed to indicate whether either group might behave differently in actual associations if sanctions did not prevent. In neither of the towns have there been many mixed marriages in recent years. This is true even though many parents who have children in high school express concern lest these children might be attracted by some one of opposite sex from the ethnic group to which they do not belong. [23]

In general the "beauty contest" choices of one sex for its opposite when analyzed indicated considerably less cleavage than the actual association scores. However, in all cases cleavages

[22] *Op. cit.*

[23] *Some sociologists would say that the associations of people in small rural towns like Las Cruces and Taos are determined by the familistic controls, whereas attitudes toward "beauty" would be determined by more universal factors.*

did exist. With one exception all of the tables indicating observed frequencies of choices of girls to boys and boys to girls, when compared with tables including expected frequencies constructed as above, are significantly different, thus indicating the presence of ethnic cleavages. [24] Thus we may assume that Anglo boys and girls think Anglo members of the opposite sex are better looking than non-Anglos. The Spanish-speaking boys and girls also chose persons of opposite sex from their own ethnic group more frequently than they chose Anglos of the opposite sex. Choices in all cases were widely distributed, many persons in each class being chosen. The choices from the "beauty contest" when classified to indicate differences between language groups in choosing outside the language groups did not constitute tables which were different enough from tables of expected choices to justify generalizing that all these differences exist in the larger universe. [25] There is not enough evidence from the sample to assume that in the universe at large under similar circumstances the members of one ethnic group are more prone to choose the opposite sex outside their own language group than members of the other.

[24] *Chi-square test scores for the tables constructed with language as the determining factor (see footnote 18) for girls choosing boys at Las Cruces was 18.45 and at Taos, 37.59; for boys choosing girls at Las Cruces, 12.03 and at Taos, 1.09. Since the probability under these conditions of obtaining a chi-square value of 10.827 is .001, only the last value is not significant having a probability of* $>.10$ $<.20$. *Ratios of self-preference for girls choosing boys for the Spanish-speaking groups were 1.45 for Taos and 4.66 for Las Cruces, for English-speaking groups for Taos, 2.30, and for Las Cruces, 2.29. For boys choosing girls these respective ratios were: 1.19, 3.36, 1.8 and 7.35. Chi-square values were low partly because of small numbers. In no cell in the observed tables were there more than 63 cases for the "beauty contest" analysis.*

[25] *Anglo girls at Taos rejected Spanish-American boys more than Spanish-American girls rejected Anglo girls. See footnote 19 for methods used in making this test. The chi-square test for the significance of the difference between the tables of observed and expected frequencies rendered a value of 38.92. The only other significant difference between the ethnic groups in respect to choosing persons of the opposite sex out of one's own ethnic*

Summary

The measures of cleavages used indicate strong tendencies for Spanish-American and Anglo students in the two New Mexico high schools studied to choose associates within their own ethnic groups. Some tendency was manifest for the members of the minority ethnic group, whether English or Spanish-speaking, to reject the members of the majority ethnic group relatively more frequently than the reverse. This latter tendency was particularly pronounced for the English-speaking minority in the high school in Taos, a town of 965 inhabitants, and less pronounced for the Spanish-speaking minority in the high school in Las Cruces, a town of 3,608 inhabitants. "Beauty contest" results in the two high schools also supported the thesis that cleavages were great. The peculiar social and ecological structure of the Southwestern trade center and its villages with surrounding farms and ranches gives the existing cleavages special social, religious, political, and economic significance.

groups was manifest by boys choosing girls in Las Cruces High School. Anglo boys rejected Spanish-American girls more than Spanish-American boys rejected Anglo girls. The Chi-square value from tables designed to indicate these differences constructed after the method described in footnote 19 was 15.56.

APPENDIX: QUESTIONNAIRE

Write in your name _____ Age _____

School grade _____ Your father's name _____

Address _____

Language spoken at home most _____

Language also spoken at home _____

Language spoken most by grandfathers (now or while living) _____

Language spoken most by grandmothers (now or while living) _____

A. Write in names of boys or girls you pal or play with most at school. Put name of person you play with most on first line.

Name	How old is he or she?	In what grade is he or she?	Is he or she related to you?
1.			
2.			
3.			
4.			
5.			

B. Write in names of boys or girls you pal or play with most on Saturday, Sunday, and school holidays. (Do not include brothers or sisters or children living in your home.) Put name of person you play with most on first line.

Name	How old is he or she?	In what grade is he or she?	Is he or she related to you?
1.			
2.			
3.			
4.			
5.			

C. What families visit most at your home? If any of these families ate a meal in your house last year, put a check after their names.

1. _____ 3. _____

2. _____ 4. _____

5. _____

D. What family in your neighborhood do you think is the best liked? (Other than your own family.)* _____

E. Who do you think is the best looking girl in your class? _____

F. Who do you think is the best looking boy in your class? _____

*The results from this question substantiated the conclusions included in the section on ecology. Criteria such as those in Table 1 indicated great cleavages.

EXPERIMENTATION WITH SOCIOMETRIC PROCEDURE IN A SELF-HELP COMMUNITY CENTER

by

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The experiment with sociometric procedure to be described in the following pages was undertaken in connection with the administration of a small self-help center, located in a poverty-stricken district with a population of about 1,000 scattered over an area a mile long and a half mile wide. Most of the families in it were on relief and quite outside the community life of the city in which they lived.

The Center was organized in response to the declaration of some of the neighborhood women that they needed classes in cooking and sewing and "a place where we can get together to meet people and talk over our problems." Because of their pressing economic needs, it was decided to make the Center a project in self-help as well as a community center.

The organization pattern was similar to that of most self-help centers. Materials were donated by interested individuals and groups throughout the city. The remaking and repair of these materials created work for the participants. The individual's first ten hours of work earned him a membership. For each hour of work thereafter he received a "credit hour," at an evaluation set by the members themselves, usually twenty or twenty-five cents. The most common forms of work were comforts and quilts, rug-making, evaluation, housekeeping and bookkeeping.

From a small and insecure beginning the project grew until at the end of two years it had a building of its own, and a varied program of self-help, adult education classes and recreation. By that time many of the problems which at an early date had been urgent (such as housing, the securing of donations from the community, and general organization) had been fairly well solved. As time went by, however, we had become increasingly concerned

The writer is indebted to Joseph Sargent for aid in the analysis of the experimental data.

about certain tensions that were not only interfering with the smooth running of the Center but also blocking the personality development for which it had been hoped the Center would provide the setting and the opportunity. As an adult education program, the Center's function was, we felt, more than provision of material goods and the acquisition of facts and skill in homemaking. It should also provide an environment in which good personal inter-relationships could be experienced in the Center and carried over into the home.

When we began to analyze the situation to see what was causing the friction, we realized more and more clearly, that the Center's membership was divided into two camps, each led by a strong and aggressive personality. This division was so well understood by the participants that when one new member came in, she was asked by an older member which "side" she was going to be on. Since the struggle between these two leaders was at the root of the trouble, it should perhaps be described in some detail. The Director of the Center summarized it in the following words:

> "When the Center began, different people were chosen to supervise the various activities. In some cases, these supervisors felt that they were the boss and had the "boss" attitude in dealing with the people. Especially was this true of Mrs. A., a woman 54 years old, uneducated, very superstitious, aggressive, illogical, and inconsistent. She thought she could do practically everything around the Center. The others feared her and yet obeyed her and seemed helpless without her. She especially enjoyed evaluating the garments that came in, the most important activity at the time. From this base she extended her authority and influence into almost every activity of the Center.
>
> "After about a year Mrs. B. came to the center and earned her membership. She was a young woman with four children, and also aggressive, although more efficient and capable and better educated. She became a leader very soon....These two personalities became competitors for social prestige at the Center....At times the conflict between them was a real detriment to the Center. Considerable time was spent by the Director in unraveling these situations. At the time of the conference they would seem to understand, but

when left alone they just couldn't get along. The others seemed to enjoy seeing them fuss and this made the situation more tense."

This rather common picture of a domineering, somewhat overbearing leader whose position is being threatened by a similarly aggressive but younger, and more capable personality was projected into an institution organized into small work groups which required varying degrees of ability to work with people.

Analyzing the work-situation, we found that some phases of it required that people work alone, others that they work in groups of two, three, four or six. Moreover, we found that the cooperation required in these different work groups was of varying degrees. In some groups it was very slight, amounting to no more than being seated together and working at the same kind of activity, but on an individual basis. In other groups, such as the committee which evaluated and set prices on the materials which came into the Center and would be bought in exchange for work-hours, the cooperation required was so great that it meant arriving at a decision fairly satisfactory to all members. The decision itself had to be unanimous, because the garment had to carry only one price.

Because of the philosophy that had permeated the Center from its inception, differences were discussed for the purpose of arriving at a clear understanding of all the different points of view expressed. Thus, a free flow of thinking and feeling was allowed, and resulted in a certain degree of chaos. As the Director of the Center put it, the situation grew to be "very tiresome for everyone"; too much energy was going into ironing out squabbles. The work of the Center was not moving forward as desired. People were being blocked in their personal development. We who were administrators had also a sense of responsibility for the situation for we had given the group a degree of freedom which it was not ready to utilize. Yet at this point we did not want to withdraw that freedom by simply ordering a cessation of the bickering. We therefore decided to try sociometric techniques to see if their use would bring about centralization of the aims of the Center members, and a harmonious coordination of effort through the individual member's awareness of the structure of the group itself as has been shown to follow upon the use of sociometric techniques.

THE ASSUMPTION THAT INDUCED US TO EXPERIMENT WITH SOCIOMETRIC PROCEDURES

The Situation

Sociometric procedures afford certain definite values to both the investigator-administrator and the subject-participants. These values are:

For the investigator-administrator, the procedures:

(1) Force him to analyze the situation in hand, the desired results, and the methods to be employed;
(2) Help him to find the real leaders (those who have group strength) for the various work activities;
(3) Correct, amplify, confirm, and extend the insight of his intuitive judgment about the group and make him more sensitive to (a) the inside organization of the group (the psycho-social network) and (b) the structure of the work-groups and the interpersonal relationships in the work-situation;
(4) Enable him to form work-groups which can function more harmoniously and therefore more efficiently; and
(5) Are backed by facts giving him the courage to proceed with a feeling of certainty.

For the subject-participants, the procedures:

(1) Provide work situations in which the tension in the interpersonal relationships among their members is reduced;
(2) Make it possible to create situations in which the interpersonal relationships themselves become therapeutic by increasing the ability of individuals in the groups to adjust to other people; and
(3) Develop in the group an awareness of its own structure and potentialities.

THE ADMINISTRATION OF THE FIRST TEST

With sociometric procedures it has been found that it is well to administer a simple test first, as a sort of warming-up process, in order to demonstrate to the group in an easy form, how it can profit from a sociometric test. In other words, people must be educated to sociometric procedures and gradually discover what benefits they can get out of them. The values which they perceive themselves to gain from the first, simple test serve as

motivation for the more elaborate tests which are to come later. Without the genuine cooperation of the participants it is hard to proceed, and in general it can be said that they will cooperate to the degree of motivation they themselves feel.

Experimentation has also shown that it is beneficial to give a group its first lesson in sociometric procedures in a situation which: (1) is simple, so that the subjects can react spontaneously; (2) will not call forth too many tensions or frictions; (3) permits easy analysis; (4) has immediacy; and (5) deals with a situation of short duration.

In facing this particular problem, it seemed that these conditions for a good first test-situation would be satisfied by a social function for which preparations were shortly to begin. The criterion chosen for the test was: "With whom would you like to work on the social committee for the Mother's Day Program? List first, second, and third choices." This was a sufficiently easy and natural question for most of the participants to answer readily. However, at the time the test was administered, it was suggested to the group that, if the plan worked out well, we might use it in reorganizing all of the committees in the Center. At this remark, the domineering Mrs. A. and one of her followers who had been acting as chairman of the housekeeping committee sensed a threat to themselves and their positions and at first refused to have any part in the experiment.

When the results were tabulated, the six people who received the highest number of choices were made the chairmen of the six committees set up to plan and carry out the social function. Since it is axiomatic in sociometric procedures that the resultant work-groups must offer the optimum satisfaction for <u>all</u> the subjects,[1] we made every effort to arrange these committees so that as far as possible each person worked with the people she had chosen. It turned out that both the sulking leader and her follower were among the six chosen to be chairmen, but both refused to serve. Yet when they came to the Center to work and found the committees proceeding merrily without them, they were exceedingly unhappy. After a while, however, they joined the committees to which they had been assigned and worked hard. Planning for the social function proceeded harmoniously and much more efficiently than had planning for similar events in the past.

[1] *J.L. Moreno and H.H. Jennings, "Advances in Sociometric Technique," <u>Sociometric Review</u>, 26-40, 1936. (The <u>Review</u> has been superceded by <u>Sociometry</u>.)*

The event itself went off more satisfactorily than any the group had previously promoted.

ADMINISTRATION OF SECOND TEST

As soon as the social event was over and while the group was still in a happy mood, the second test was introduced. In two respects its administration was considerably more difficult than the initial had been. In the first place, it was harder to work out the criteria, and, in the second place, the relative complexity of the test made it difficult for the participants to understand. The awakening of the participants to the meaning of the procedure made a much fuller explanation desirable than the first test needed.

The first factor — choosing criteria for the second test — meant a careful analysis of the whole work-situation, for the Center was organized essentially for work, with the social situation following naturally as a result. We had, therefore, to analyze the work-situation thoroughly before we could determine the criteria which were to reveal the attractions and rejections.

This analysis showed that seven different kinds of work-activities were going on at the Center: comfort-and-quilt-making, rug-making, evaluation (setting prices to the Center members on the materials which had come in), conducting the children's center, housekeeping, and clothing construction. Of the seven, three (comfort-and-quilt-making, rug-making, and clothing construction) were the activities through which the Center families earned goods. The other activities afforded no direct benefits in terms of material goods, but were forms of service which had to be rendered in order to make the Center function. Each of the seven was a learning situation. All the activities except clothing construction, which was done by individuals working as individuals, were done by groups, and so provided opportunities for fellowship.

On the basis of this analysis we set up six categories of work-groups (excluding clothing construction because of its individual character). The criteria were then evolved for questions to discover the preferences of the different participants for working companions in these different work-situations. Because each work activity contained a learning situation important for the successful functioning of the women in their own homes, we planned that the committees chosen in this fashion should rotate from one activity to another, so that in a given length

of time each participant would have worked at every activity. The categories as finally determined: Comforts and Quilts, Rugs, Evaluating, Housekeeping, Children's Center and Bookkeeping. The members of the Center were asked, for each different activity: "With whom would you like to work on the _____ Committee?" and "With whom would you prefer not to work on the _____ Committee?"

The second factor that made the administration of the second test more difficult was the attitude of the participants themselves. The first test had been so simple and natural that they had responded as a matter of course without giving the matter much thought. This time their feelings were mixed. They were enthusiastic because, in their first experience with sociometric procedures, the groups which had resulted from the test had been free from interpersonal frictions, with the consequence that the work had been accomplished with a new celerity; they were reluctant because the second test presented so many more questions, and they were not as yet certain that they wanted to reveal the inner structure of the group. Nevertheless, the multitude of questions which the Center members asked about the test showed their interest and curiosity about the working of the whole plan.

As in the case of the first test, the domineering leader, Mrs. A., sensing what she thought was a threat to her position, was strongly averse to the plan, and managed to infect some of her followers with a similar feeling toward it. In the end, when the majority went against her and decided to try out the plan, she consented only with an ungracious: "Well, okay, then. That's all I can say." The other leader, Mrs. B., however, thought the plan good and filled out her sheet immediately.

Other factors about the test disturbed the groups. The length of the list of questions and the number of choices to be made daunted some of the members of the group. Especially disturbing to most of them was the fact that, this time, they were also asked to name the people whom they did not want to work with. They felt this was wrong, for "The Bible tells us to love everybody." This reluctance was so great that the Director withdrew the questions which aimed to discover the rejections.

Out of the twenty-seven persons who took the test, only eight understood and filled out the blank at once and without questions. The others had to be interviewed personally by the Director in order that all questions about the test could be answered to their satisfaction. Sometimes repeated explanations were required be-

fore they were willing to write down their choices. The whole process took almost three days.

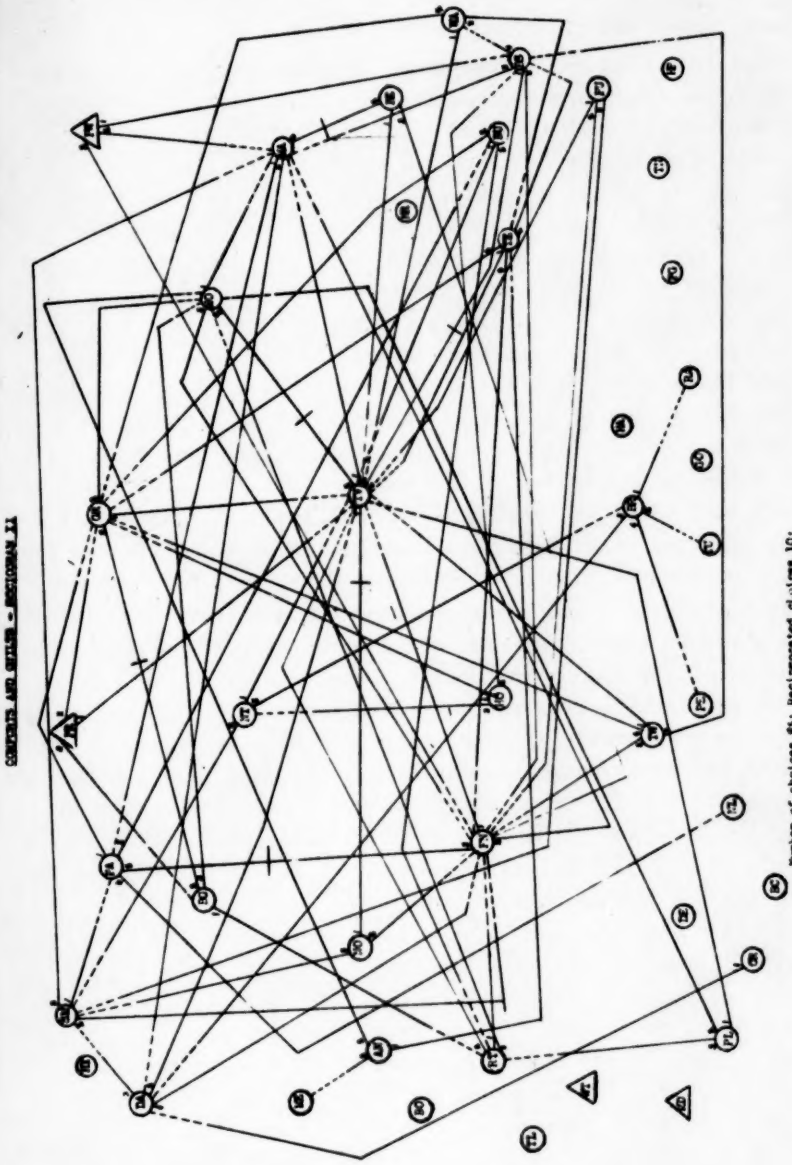
STATISTICAL ANALYSIS

First, second and third choices were asked for in each of the six categories. The number of people to answer the questionnaire was 27. Space was left for fourth choices, but comparatively few (10) indicated four. Of the entire 27, seventeen filled out the entire questionnaire (gave three choices in all six categories). The maximum number to be chosen by anyone was 24 in the six categories. This number of choices was made by 3 people. The minimum number of choices made was 8, made by one person. The median number of choices made was 18. In comparison with the results of the regular sociometric procedure of requesting a specific number of choices, the number of choices made by the Center members was relatively high.

Six people received no choices from anyone. Three people received choices in only one or less than three categories. Some of the people who thus appear to be isolated were not present at the time the test was administered and so were perhaps not thought of. Others were known to the administrators of the test to be actually rejected, but since the group apparently was unwilling, as a whole, to express rejections, this feature was not measured.

On the basis of the choices thus recorded, a diagram — known as a sociogram — was made of the pattern of relationships in each of the six activities. In order to facilitate the comparison between the six sociograms,* it was deemed advisable to standardize the placing of the circles which were to represent the people under consideration. That is, the four or five individuals who, in the criterion of Comforts and Quilts, received five or more choices were spaced relatively widely apart on the paper and each was surrounded by the people who had selected them as their first choices. Identical placement of every one of the 27 individuals was followed in the subsequent sociograms. This was done in order more easily to perceive the changes in the pattern of choices from one criterion to another — i.e., from sociogram to sociogram. On these sociograms, the "stars" (those who received five or more choices) were indicated by heavy circles; those chosen, but who did not

*Due to limitations of space only one of the sociograms (II) is reproduced.


Number of choices 85; Reciprocated choices 10;
Stars 4; Triangles 0; Circles 0; Squares 0;
Chosen but not choosing 5; Isolates 4.

take the test, were indicated by dotted circles; and the rest were indicated by single-line circles. The names of the group were placed in the circles to represent the various individuals. Circles represent women and triangles represent men.

The direction and character of the choices from one Center member to another were represented by lines; lack of reciprocation was indicated by a dotted line. A choice of individual A for individual B, for instance, was indicated by a solid line from the circle "A" in the direction of circle "B," and the degree of the choice (1st., 2nd., or 3rd.) was placed on the line near the chooser's circle, i.e., near circle "A." If this choice was not reciprocated by B, this line, throughout the second half of its length, was dotted. This gave a graphic illustration of a choice (1st., 2nd., or 3rd.) emanating from A and encountering indifference (no choice) from B. If, on the other hand, B had reciprocated A's choice of him, then the entire line from circle A to circle B was drawn solid to indicate choice expressed from both A and B, while the degree of B's choice (1st., 2nd., or 3rd.) of A was placed close to circle "B." Thus, the "stars" showed a number of lines leading to them. Since the outgoing choices from any one person was limited to three or four, only this number of lines would be solid emanating from him and therefore all but these three or four lines running to the circle of a "star" would be dotted at the end nearest him.

On examination of a sociogram thus drawn, the eye could easily follow any particular line to see whether the choice it represented was reciprocated or unreciprocated (i.e., if the line was projected in a solid or partially dotted line). As mentioned above, the location of the names of the individuals on Sociogram I, Comforts and Quilts, has been followed in all the rest of the sociograms for convenience of comparison.

In this way, sociograms were made for each of the six criteria. In order to estimate the extent of leadership (or popularity) attained by those who received the most choices in the various categories, some form of ranking was necessary. It was not sufficient to say that A received 20 choices without saying whether they were first, second or third choices. Acting on the assumption that the high value is a first choice, it followed that the highest value of all is a first choice which has been reciprocated by another first choice, thus expressing maximum satisfaction. It followed also that a choice received by A, but out of range of A's own choice, was of lesser rank than one received

in reciprocation of one of his choices.

Reasoning from this assumption, the lowest score for a choice would be given when one of A's choices failed to be reciprocated. Further, the failure of his first choice to be reciprocated would

SCORING SCALE

Reciprocated Choices	Points
First Choice Reciprocated by a First Choice	9
First Choice Reciprocated by a Second Choice	6
First Choice Reciprocated by a Third Choice	3
Second Choice Reciprocated by a First Choice	6
Second Choice Reciprocated by a Second Choice	4
Second Choice Reciprocated by a Third Choice	2
Third Choice Reciprocated by a First Choice	3
Third Choice Reciprocated by a Second Choice	2
Third Choice Reciprocated by a Third Choice	1
Choices Coming from Individuals Not Chosen	**Points**
A First Choice	3
A Second Choice	2
A Third Choice	1
Penalties[2] (when Choices Were Not Reciprocated)	**Points**
Chooser's First Choice Unreciprocated	6 minus
Chooser's Second Choice Unreciprocated	4 minus
Chooser's Third Choice Unreciprocated	2 minus

[2] *As remarked before, the lowest scores were awarded when a person's choice or choices failed to be reciprocated. Since the value of 1 had already been assigned for the lowest categories of choice received, it followed that the even lower values to be awarded for unreciprocated choices would have to take a minus form, and be considered as penalties. This step is consistent with the view that the person whose interpersonal relations within the group were best integrated would have his first, second and third choices reciprocated by the first choices of the persons chosen. A person all of whose choices went unreciprocated would, therefore, be considered as having his interpersonal relations in the group badly integrated, and would therefore be penalized, in order to emphasize in the scoring the high value of reciprocated choices.*

result in a lower score than the failure of his second or third choice to be reciprocated. Accordingly, a scale was arranged which assigned values to every choice which could be made or received under the conditions of this test.

It must, however, be borne in mind that this scale is a purely arbitrary one: the values for the various scores are not absolute but relative. Nevertheless, the following scale does permit comparison between the various scores within this experiment.

The total[3] ranking (the total of ranking in all six activities) shown in Table A, p. , was not significant because the rankings were so varied from activity to activity. Running down the list of ranking for Comforts and Quilts, for instance, it was not until we reached the person who ranked 10th (DA) that we were able to find someone whose ranking in all activities was equal to or higher than her ranking in this activity. No person ranked first in any two activities; two persons ranked second in two — one ranking second in both Housekeeping and Bookkeeping and the other in Comforts and Quilts and Evaluating. One person ranked third in two activities — Bookkeeping and Children's Center — and one person ranked fourth in two activities — Bookkeeping and

[3] *In the following Ranking List, when two or more people are tied for tenth place, for example, in any one activity, they are all ranked tenth. However, a figure indicating the number of people participating in this rank (2, 3 or 4, for instance) is placed above and to the right of the figure indicating the rank. Subsequently, the next 1, 2, or 3 rankings (for instance) are omitted. Thus in the column for the activity of Comforts and Quilts, we see that BG and BU both rank 15th. The fact that two persons hold this rank is indicated by the figure "2" after the figure for the rank. The rank of 16th is then omitted, the next person in rank being NT who is ranked 17th. This procedure has the effect of showing at a glance how many persons participate in any one ranking; however, the number of the lowest rank in the various activities varies, according to the number of ranks which are shared by one or more persons. Thus, in Comforts and Quilts the lowest ranking is 18th, nine people being of this rank, and there being only 18 different rankings in this activity. In Rugs, the lowest rank is 19th, with seven persons; in Evaluating, 20th, with seven; in Housekeeping, 21st, with six; in the Children's Center, 14th, with eleven; and in Bookkeeping 19th, with eight.*

TABLE A

RANKING

Name	Comforts and Quilts	Rugs	Evaluating	Housekeeping	Children's Center	Bookkeeping	Average Rank
DA	10^{3}	8^{2}	5	3	7	8^{3}	6.8
PA	8	5	1	8	14^{11}	12	8.0
BR	7	10^{4}	4	1	8^{3}	19^{8}	8.16
SM	9	10^{4}	4	7	3	3	8.33
GR	5^{2}	4	14^{2}	15^{5}	–	4	8.4
ME	4	16^{2}	9^{3}	11^{4}	11^{3}	1	8.66
RT	13	14^{2}	12	2	14^{11}	2	9.5
BS	2^{2}	10^{4}	3	11^{4}	14^{11}	17^{2}	9.5
BG	15^{2}	16^{2}	6^{2}	4	1	19^{8}	10.16
TE	13^{2}	9	6^{2}	11^{4}	11^{3}	13	10.5
FN	2^{2}	19^{7}	2	15^{5}	14^{11}	14^{3}	11.0
BU	15^{2}	10^{4}	8	6	8^{3}	19^{8}	11.0
TW	18^{9}	18	13	8	5^{2}	6	11.3
WT	–	–	16^{2}	–	–	7	11.5
MA	5^{2}	3	14^{2}	15^{5}	14^{11}	19^{8}	11.6
BE	10^{3}	1	20^{7}	15^{5}	11^{3}	14^{3}	11.83
HO	18^{9}	8^{2}	18^{3}	11^{4}	5^{2}	11	11.83
NO	18^{9}	19^{7}	9^{3}	5	2	19^{8}	12.0
WA	18^{9}	2	18^{3}	10	14^{11}	17^{2}	12.6
CR	10^{3}	6^{2}	20^{7}	21^{6}	14^{11}	5	12.6
TV	1	19^{7}	9^{3}	20	14^{11}	17^{2}	13.3
NT	17	19^{7}	20^{7}	15^{5}	4	19^{8}	15.6
PU	18^{9}	6^{2}	20^{7}	21^{6}	14^{11}	8^{3}	16.3
PL	18^{9}	19^{7}	20^{7}	21^{6}	14^{11}	8^{3}	16.6
PR	18^{9}	19^{7}	20^{7}	21^{6}	–	8^{3}	17.2
PW	18^{9}	14^{2}	16^{2}	21^{6}	–	–	17.25
AN	18^{9}	19^{7}	20^{7}	21^{6}	14^{11}	19^{8}	18.5

NOTE: The raised number indicates the rank; see footnote 3.

Rugs. However, in all six activities, only one person ranked last, and in four activities, two persons ranked last.

In the last column of Table A we see the average ranking of the members of the group. This average was arrived at by dividing the sum of the ranking of the members in all the activities in which each participant functioned (and was chosen) by the number of activities in which he or she functioned. It will be seen

that, on the ranking list, the members are placed in the order of their average ranking. First place was attained by DA with an average ranking of 6.8; her ranking in the separate activities ranged from 3rd in Housekeeping to 10th (with two others) in Comforts and Quilts. The lowest ranking was attained by AN with 18.5. She ranked last in six activities, but in no activity was she alone in this position. The mean average ranking is 11.85, and there are 17 above and 10 below this figure. Here again is indicated the broad diversification of the choices made by the members of the different work-groups. This would seem to indicate a mature discrimination as to the relative desirability of the various group members for the different work-situations.

MOTIVATIONS

In the second test, the members of the Center were asked to give reasons for their choices. In examining the reasons or motivations, it was found that there were 77 different reasons given for choosing various people. Duplication among these 77 motivations could be very easily inferred because of paraphrasing, but for purposes of tabulation the greater portion of them were kept separate.

TABLE B

MOTIVATIONS

Name of Activity	Number of Expressions of Motivation	Number of Different Motivations
Comforts and Quilts	86	23
Rugs	86	31
Evaluating	92	33
Housekeeping	99	27
Children's Center	78	28
Bookkeeping	81	19

DISTRIBUTION OF MAJORITY OF MOTIVATIONS IN EACH ACTIVITY

Motivations	Comforts & Quilts	Rugs	Evaluating	Housekeeping	Children's Center	Bookkeeping
"Knows how"	35	28	17	11	5	22
"Experienced"			12			10
"Capable"					5	11
"Good worker"	6	9		11		
"Enjoys it"			5			
"Knows value" (of goods)			8			
"Good with Children"					8	
"Willing"				12		
"Clean"				8		
"Kind"					10	
"Patient"					7	
"I like to work with her"		5				
"Friendly"		5	5			
"Jolly; humorous"	7			10		
"Likes children"					5	
"Interested in work"					6	

An examination of all the motivations expressed for the various activities shows what seems to be a very complex picture, yet the motivations seem to fall into but three broad groups (see Table C). The subjects chose the people with whom they wished to engage in the various activities for some reason connected with (a) the way in which people did the work; (b) the way they acted while doing the work (in other words, their personality while working); and (c) an indeterminate class which contained motivations which were not ascribable to either of the other two classes. The abilities and personalities of the members of the Center provided a reasonable explanation for the diversification of motivation into these three classes.

In the first place, the Center desired to train its various members in all of the six activities. Few of the members had come to the Center with a skill in more than one of the activities. Therefore, it seemed reasonable to expect that any one person might be chosen for the activity in which she was already equipped with some skill, and, in turn, would choose people for other activities

in which they were especially skilled in order that she might gain competence in the activities in which she was unskilled.

Similarly, it would seem reasonable to expect that, if a Center member were called upon to act as teacher in an activity in which she had already achieved skill, she would first choose as her co-workers those whom it would be easy to teach. If, however, she were to act as a worker — not as a teacher — and if there were any choice as to efficiency, she would choose those who would make efficient co-workers. Furthermore, if an equally high degree of skill could be expected from all the Center members, she would choose first of all those with whom it was socially most pleasant to work.

In all the activities, over 50% of the choices (ranging from 57% to 73%) were made on some basis which indicated that the chosen person "Knows how." This can easily be seen in Table C, below. This result reflects the view of the investigators that most members were chosen because they had some skill. The personality factor was made the basis of the choice to a percentage which ranged from 22% to 36%. The percentage of the different motivations falling into the indeterminate group was as follows:

Comforts and Quilts	4.5%
Rugs	7.0%
Evaluating	18.0%
Housekeeping	12.0%
Children's Center	12.1%
Bookkeeping	6.3%

A tabulation of the percentages of the various classes of motivation in the different activities is shown in Table C.

An examination of the various activities gives an explanation of this distribution. In Comforts and Quilts, for example, relatively few of the Center Members possessed the skills necessary to carry on this activity. Hence, it was reasonable to expect that most of the members would choose to work with others who could teach them how comforts and quilts were made. A certain smaller number of the members felt confident of their own skill in making these articles, and they would be expected to choose (a) members whom it would be easy to teach or (b) members whose personality made them pleasant co-workers. This is borne out by the figures, for, as we can see, 71% of the motivations for this activity fell into the "knows how" class, and only 23.5% into the "personality" class.

TABLE C

DIVISION OF MOTIVATIONS INTO THREE CLASSES

Activity	"Knows how," etc.		Personality		Indeterminate	
	No.	%	No.	%	No.	%
Comforts & Quilts	61	71.0	21	24.5	4	4.5
Rugs	49	57.0	31	36.0	6	7.0
Evaluating	54	58.0	21	22.7	17	18.0
Housekeeping	62	62.6	25	25.2	12	12.0
Children's Center	44	57.1	26	33.7	7	9.2
Bookkeeping	59	73.7	16	20.0	5	6.3
Total Motivations	329		140		51	
Percentage of Motivations (average)		63.27%		26.92%		9.8%

The making of rugs is a less complicated task. Therefore, we might expect in this activity a higher number of motivations of the "personality" class than with Comforts and Quilts. This, too, is borne out by the figures, for we see that here as many as 36% of the choices were for "personality" reasons (the highest for any of the activities) and only 57% for "knows how" reasons.

With Housekeeping, the situation was somewhat different in the Center. The members looked upon this activity — much as they felt about it in their own homes — as a chore to be got through quickly. Although the Housekeeping occupied only about an hour at the end of each working day, there seemed to be a feeling that it was merely a prolongation of the drudgery which they encountered every day at home and which they hoped to avoid when they came to the Center. There was a definite tendency to get it over as soon as possible and, consequently, although there was here none of the requirement of expertness to be found in Comforts and Quilts, a certain speed and general capability appeared in the motivations as requirements for a co-worker. Thus, it was quite difficult to break the motivations down into the three classes, for qualities of neatness, willingness, "good helper" and "good worker" — qualities which might possibly be considered as coming into the "personality" class — were in the majority. They were nevertheless placed in the "knows how" class, and the result shows that 25.2% of the motivations fell into the "personality" class, with 62.6% in the "knows how" class — of

which many might conceivably have fallen into the "personality" class.

In Evaluation we faced the situation that had provided the greatest single bone of contention in the Center. The Director and all of the members were well aware of this, and all were endeavoring to find a solution to the problem. The emotional tension — and the consequent unsureness in the motivations — is illustrated by the percentage (18%) of motivations which fell into the "Indeterminate" class. (This does not mean that the motivations themselves were indefinite — only that the classification of them was difficult.)

In the distribution of choices for the Children's Center, we see that the motivations in the indeterminate group is rather small (9.2%). In this activity, the "personality" class reaches 33.7% (the second highest) and the "knows how" class is 57.17% (the second lowest). Now it is possible that some of the motivations which, because of their phraseology, seemed to fall into the "personality" class, might, on more careful consideration on the part of the choosers, have been rephrased in such a way that the real meaning would have indicated inclusion in the "knows how" class. Nevertheless, it has been the observation of the Director of the Center that some of the Center members were not aware of what is involved in care of children. Therefore, it seemed reasonable to expect that some of the members would not put the same amount of thought into choosing people for the Children's Center as they would into choosing people with whom they were, for instance, to make quilts. This situation is looked upon as serious, and steps were considered to correct it. Some of these steps were as follows:

1. Guided observation of the children in the play center.
2. Participation in some of the more enjoyable activities of the children.
3. An attempt to make, in the Center, some inexpensive play equipment for the children.
4. The use of the Public Library as a source of children's books.
5. The Toy Loan Library as a source of play equipment to supplement that in the homes.
6. Instruction on the preparation of inexpensive foods for children.

Due to the generally low educational level of the majority of the members of the Center, Bookkeeping was looked upon as

something of a mystery. Most of the choices went to people who had had "schooling." In this activity, the percentage of motivations in the "knows how" class reached 73.7% — the highest of all six activities.

From the great diversification — almost vagueness — of the motivations found as a result of this test, it would seem to follow that a good deal more definiteness would be desirable in further tests. In other words, in order to uncover at any time the social and expert standing of any member of the group it would seem necessary that the motivations behind the various choices of this person indicate clearly, for each activity, whether the member is chosen because she (a) is willing to teach and is recognized as a good teacher; (b) can be looked upon as equally efficient with the chooser in this particular activity, and is therefore chosen as a willing or efficient co-worker; (c) has pleasant social qualities (the personality factor); or (d) is chosen for one of the indeterminate class of reasons, such as "because the chooser thinks the chosen would profit by the Center," or because she "needs to learn." Whether this can be accomplished by supplying the Center members with two or three clearly stated motivations (from which to make a selection) that have to do with skills in the various activities, two or three that have to do with personality, and blank spaces in which to write motivations of their own suggestion; or whether this can be accomplished by giving the participants clear instructions as to how they should define the statements in their motivations, remain to be seen. In any case, so long as the Center group remains inarticulate in the statement of its motivations (whether from non-statement, under-statement or over-statement) it will be almost impossible to obtain an accurate idea of the emotional growth in the Center members.

It is quite reasonable, for instance, to expect in a group of this sort that, as the various members attain a common level of skill in the various activities, the choices will be made less in the "knows how" class and more from motivations of the "personality" class. That is to say, when skill, imitation or learning is less in demand, the personality factors will come more into prominence. This process will be less observable in Bookkeeping for the reason that in this activity those who have had the benefit of "schooling" will be considered to be the more efficient. As regards Housekeeping, a certain amount of skill and willingness will always be in demand because it is these two factors which will best promote a quick and harmonious accomplish-

ment of what has been assumed to be an unpleasant task, and one in which there is little chance for sociability.

In Comforts and Quilts and Rugs, it is very likely that, as soon as the members grow skilled in these activities, their choices will go to individuals on the basis of pleasant personalities rather than for their abilities.

ASSIGNMENT TO WORK-GROUPS MADE FROM SOCIOGRAMS

INTRODUCTION

As remarked above, it was from Comforts and Quilts, Rugs and Clothing Renovation that the members of the Center could derive actual benefit in goods. Naturally, they also derived from these activities some benefit of a less tangible nature, for they had an opportunity to acquire a skill which, in most cases, they had not had before coming to the Center. In Evaluating, Housekeeping, the Children's Center and Bookkeeping the members made a definite contribution toward the maintenance and functioning of the Center in addition to receiving credit hours for their work. Here, also, they derived some intangible benefits, for the experience which they gained in these activities would stand them in good stead outside the center. In particular, in the Children's Center, they gained a new understanding of how to deal with children, how they best should be fed and how they could be taught to play together.

Analysis of the actual work-situations showed that four of the activities (Housekeeping, Evaluating, the Children's Center and Bookkeeping) required a specific number of hours per week from the groups participating in them, and it also showed the ideal number of workers needed for these activities.

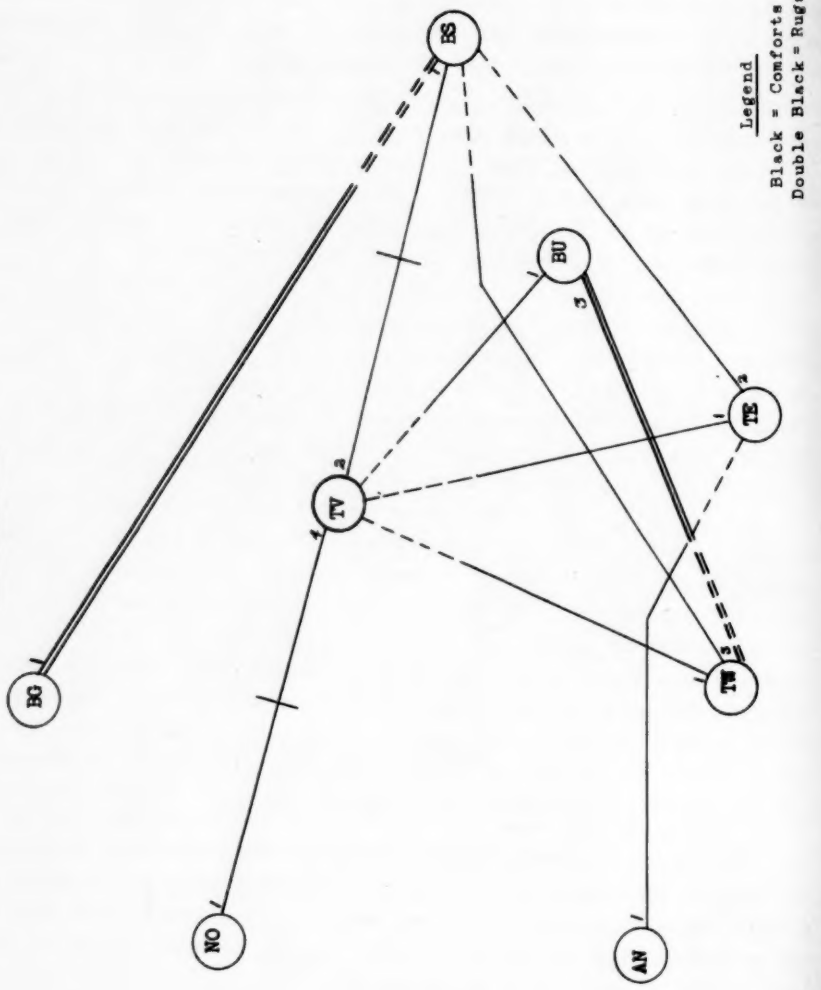
THE THREE BASIC GROUPS

The activities of Comforts and Quilts, Rugs and Clothing Renovation were carried out independently of the four mentioned above. The size of the groups engaged in these three activities could vary from four people to nine or ten, without impairing the efficiency of the activity. All three activities were carried on continuously and concomittantly. Accordingly, it was decided to divide the 27 members of the Center who took the second sociometric test into three basic groups which would rotate between these three activities, spending one week on each. The personnel for the other four other groups could be drawn from the entire group of twenty-seven without materially affecting

the efficiency of the three basic groups in their respective activities.

In order that each Center member should do his or her share in the activities essential to the maintenance of the Center (Evaluating, Housekeeping, Children's Center and Bookkeeping), and in order that he might be assured the experience and knowledge to be derived from participation in each of these activities, it was thought advisable for the member to participate at regular intervals in each of them. Consequently, in addition to the rotation of the three basic groups among the three basic activities (Comforts and Quilts, Rugs and Clothing Renovation) it was arranged that each member should rotate among these four other activities, as well. Since the sizes of these four groups varied from three, for Bookkeeping, to six, for Housekeeping, it followed that the time for the rotation of all the twenty-seven Center members through each activity would vary. Taking the smallest work-group (Bookkeeping), with its membership of three, it can be seen that it would require eight weeks for the entire group (allowing for three absentees) to function in this activity for one week. Since this eight-week period was the longest required for a member to reappear in the order of rotation for any one activity, the other group rotations were geared to this longer period. Thus, while a member would, with his basic group, appear every three weeks in either Comforts and Quilts, Rugs or Clothing Renovation, she would reappear once every seven weeks doing evaluating or taking care of the children in the Children's Center, once every four weeks doing housekeeping, and once every eight weeks doing bookkeeping. Therefore, every eight weeks, every member of the Center would participate at least once in every activity. This, of course, meant taking the working week of the Center (three days per week) as the unit of rotation.

Following the sociometric principle of the optimum of satisfaction for everyone, assignments were made in the three basic groups, as a first step. It was seen that the inner structure of these work-groups was fairly loose, and that the assignments to them could be made with relative ease. But when it came to the other four groups, it was seen to be necessary to investigate the actual working structure of these groups in order that the assignments could be made to the best advantage of the participants. Accordingly, a careful analysis of the various work-situations was made.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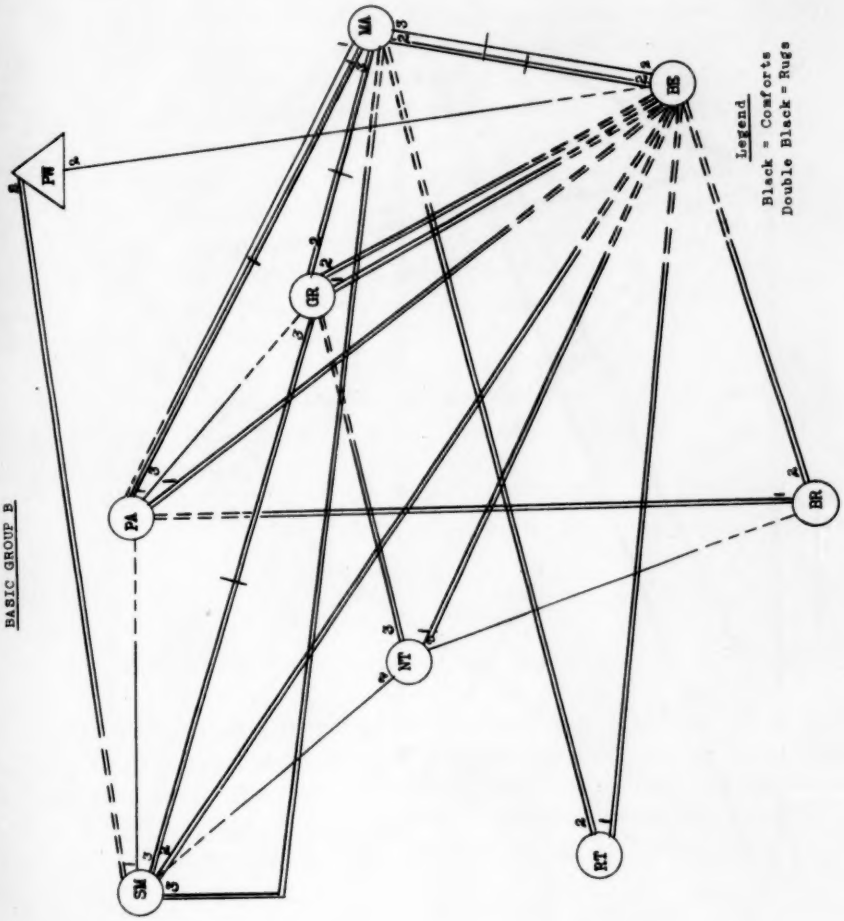
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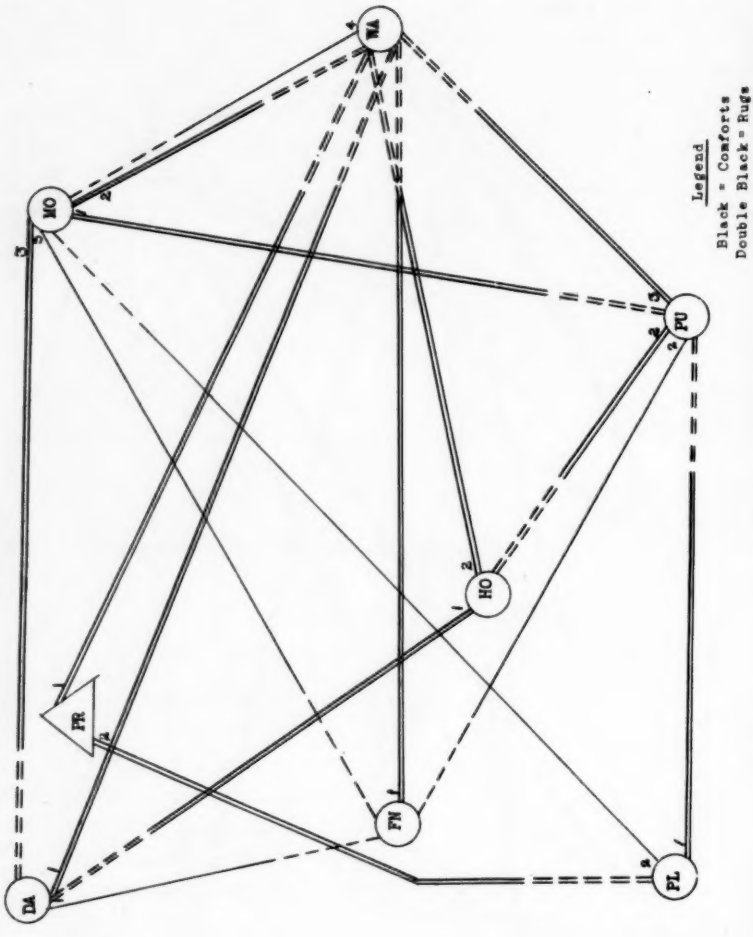
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Double Black = Rugs
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PU
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DA
PL

ANALYSIS OF WORK-GROUPS

The object of this analysis was to determine the constitution of the various working units in the work-groups. It was found that it was possible to make a graphic description of the tasks in each work-group. The analyses for six of the groups follow below. It will be seen that the seventh, Clothing Renovation, is missing. This activity could be carried on by one or more people, working independently, both of one another and of the other groups. This activity had always been considered an "overflow" activity, and one in which people generally worked alone. Therefore, no work-group structure analysis of this activity was needed.

In the analyses, each circle indicates a worker (Center member). A solid line drawn between two or more circles indicates that close cooperation is required between these workers. A dotted line signifies a need for loose cooperation. In one case (Evaluating), a double line is used to indicate an especially close degree of cooperation.

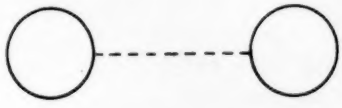
Distributed among the analyses of the work-group structures will be found the sociograms which resulted from the assignments to the various work-groups. It must be emphasized that, for the basic groups, the assignments were made on the choices for both the Comforts and Quilts and the Rugs activities. (No choices were secured for Clothing Renovation).

WORK STRUCTURE I
Comforts and Quilts

(To be performed by one of the basic groups)

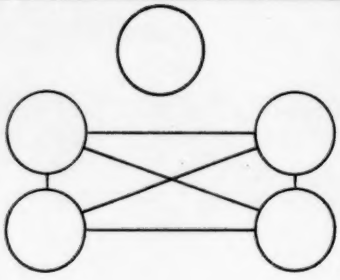
The making of Comforts and Quilts required a minimum of four persons, although as many as twelve could conceivably be occupied at this activity. The work structure breaks down into one closely-knit group of four, one loosely-knit group of four, one loosely-knit pair and two individual operations, as follows:

1. Sorting out materials.

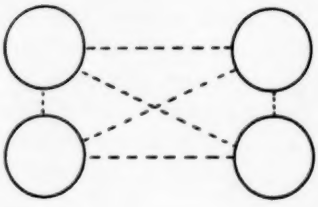


1. Deciding on pattern.
2. Preparing lining.
3. Hemming edge.

1. Pressing blocks.



1. Pinning lining on frame.
2. Putting cotton on lining.
3. Putting on pieced top.
4. Pinning top to lining.
5. Quilting.
6. Taking quilt out of frame.



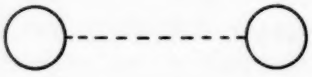
1. Cutting out blocks.
2. Sewing blocks together.

WORK STRUCTURE II
Rugs

(To be performed by one of the basic groups)

Rug making required a minimum of four persons, while nine could find work at it. The operations break down into one for a loosely-knit group of four, one for a pair working in close co-operation, one for a pair working in loose cooperation and one for individual, as follows:

1. Sorting materials for rugs.



1. Sewing rags together.

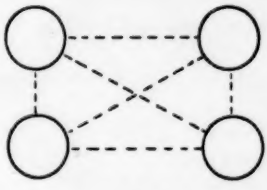
1. Getting loom ready.
2. Weaving rug.
3. Taking rug off loom.

1. Tying ends of rug.

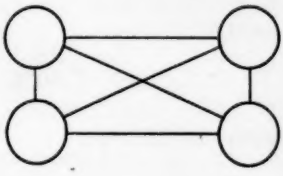
WORK STRUCTURE III
Evaluating

Evaluating was best performed by a sub-group of four people. In their chief functions they must work in an especially close cooperation, as a group of four, since it is imperative that this group agree on one price at which each article is to be made available to the Center members. There are three other functions for a more loosely-knit group of four, and four tasks to be performed by individuals working alone.

1. Bringing out materials from store-room.
2. Sorting materials.
3. Keeping store-room in order.



1. Deciding on value of each garment on hand.
2. Pricing at any time articles to be sold to meet special needs of individuals.



1. Entering name and price of garments.
2. Pinning price-tag on articles.
3. Hanging up articles.
4. Selling throughout the week articles not sold on Mondays.

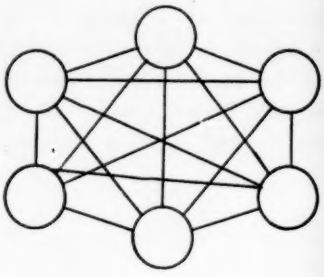
WORK STRUCTURE IV
Housekeeping

Housekeeping required a minimum of six people. There were two functions in which all six worked together closely and three functions in which a closely-knit group of three was required. More loosely-knit groups of three were required by three further

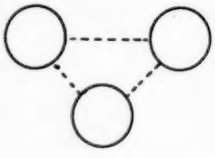
functions and there were three functions to be performed by individuals working separately.

1. Cleaning bathrooms.

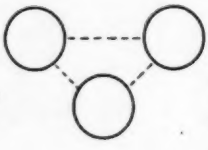
1. Choosing committees for housekeeping and preparation of food for Children's Center.
2. Waxing and polishing floors.



1. Dusting furniture.



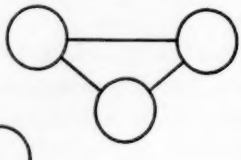
1. Sweeping floors.



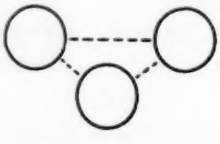
1. Scrubbing floors.

1. Deciding on noon lunch.
2. Buying groceries.
3. Preparing lunch.

1. Washing windows.



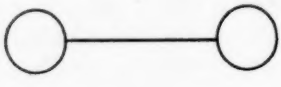
1. Taking food to nursery.
2. Washing dishes.



WORK STRUCTURE V
Children's Center

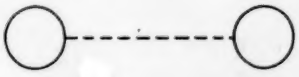
This activity required a minimum of four people. These are divided into pairs, for which the tasks require two pairs working in close cooperation and one working in loose cooperation.

1. Greeting the children.
2. Removing their wraps.



1. Washing children's hands and faces.
2. Eating lunch with children.
3. Supervising play and toileting.

1. Preparing orange-juice and cod liver oil.
2. Reading stories.
3. Supervising nap period.



WORK STRUCTURE VI
Bookkeeping

Bookkeeping required three people. One person working alone could take care of three tasks, while five others required a pair working in close cooperation.

1. Checking workers in; recording times of arrival and leaving.
2. Computing value of articles checked out by each person during previous week.
3. Computing number of credit-hours.

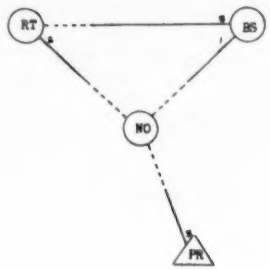
1. Recording number of hours worked previous week.
2. Entering in sales books the exact number of credit-hours for each member.
3. Posting names of members and number of credit-hours.
4. Keeping attendance-sheet.
5. Keeping seniority record of people receiving comforts, quilts and rugs.

STRUCTURES OF WORK GROUPS - ROOSEVELT

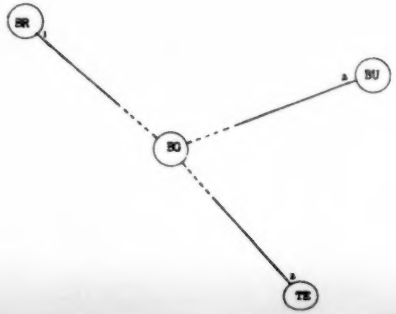
STRUCTURES OF WORK GROUPS - BOOKKEEPING

SOCIOGRAMS OF WORK GROUPS - CHILDREN'S CENTER

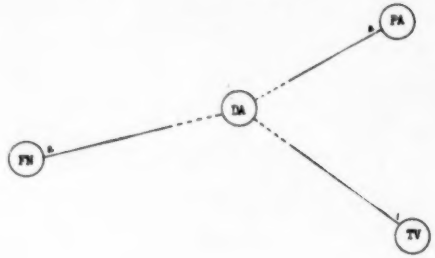
GROUP I



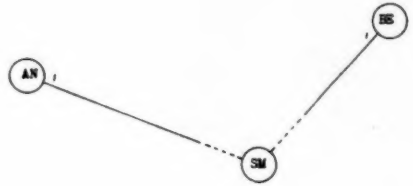
GROUP II



GROUP III

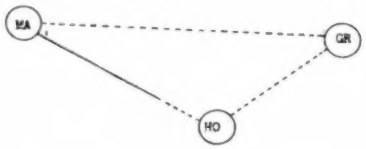


GROUP IV

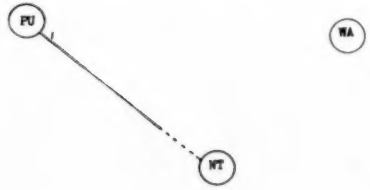


SOCIOGRAMS OF WORK GROUPS - CHILDREN'S CENTER (Con't.)

GROUP V



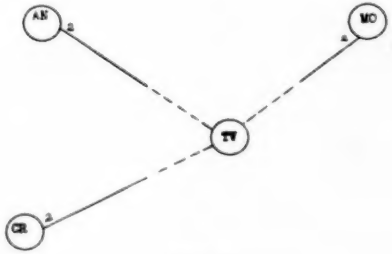
GROUP VI



GROUP VII

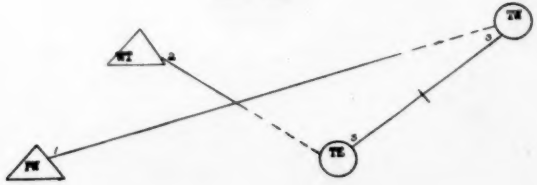
STRUCTURES OF WORK GROUPS - EVALUATING

GROUP V



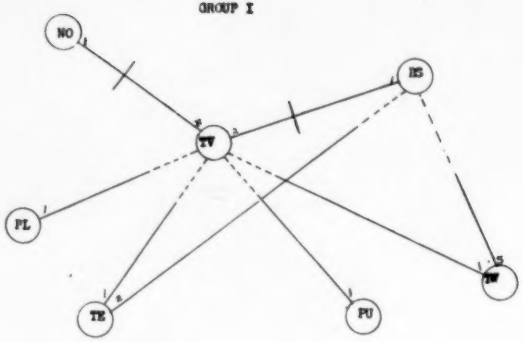
GROUP VI

GROUP VII

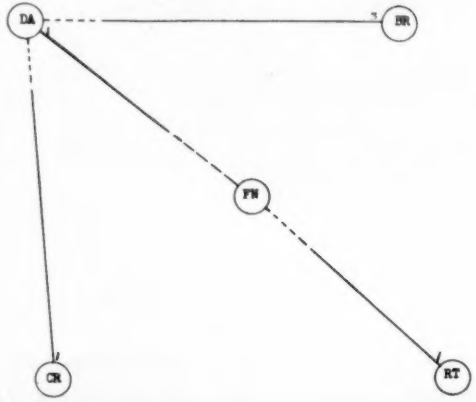


SOCIOGRAMS OF WORK GROUPS - COHORTS AND QUILTS

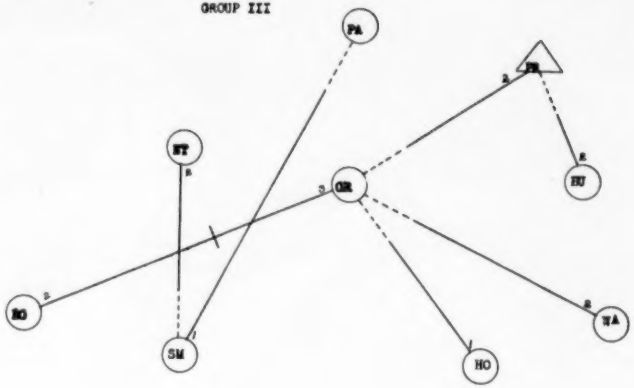
GROUP I



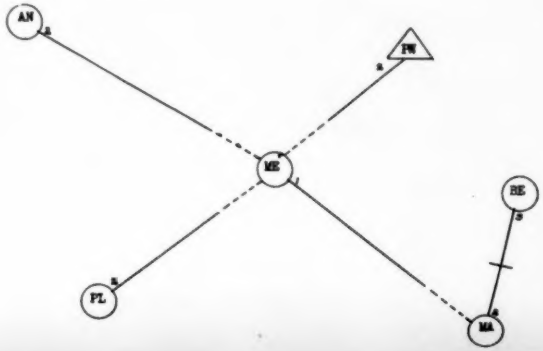
GROUP II



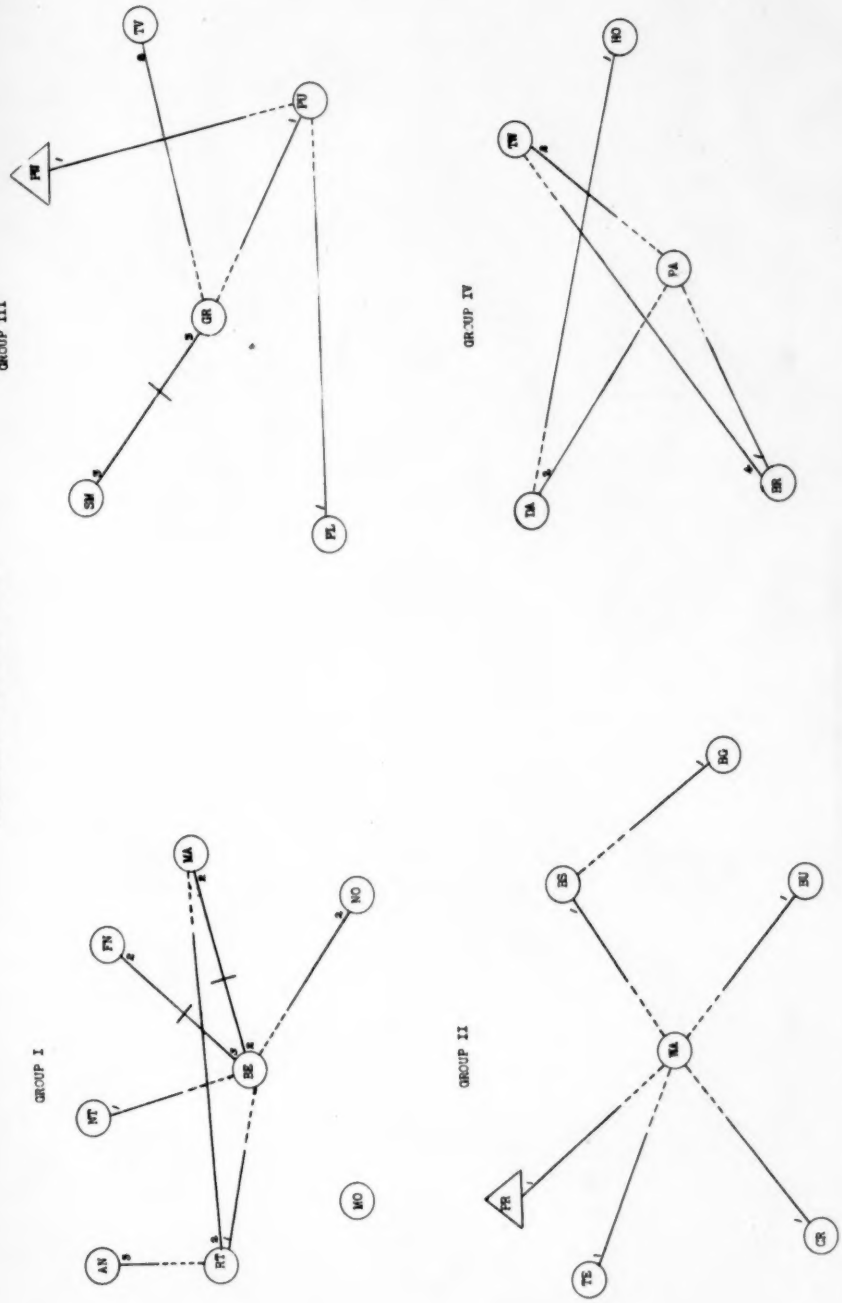
GROUP III



GROUP IV

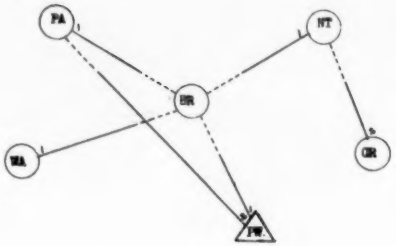


SOCIOGRAMS OF WORK GROUPS - RUNS

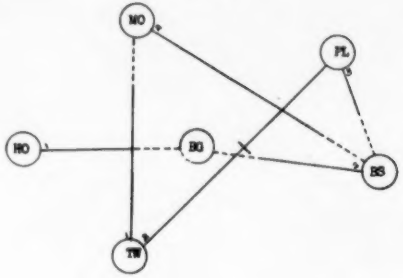


SOCIOGRAMS OF WORK GROUPS - HOUSEKEEPING

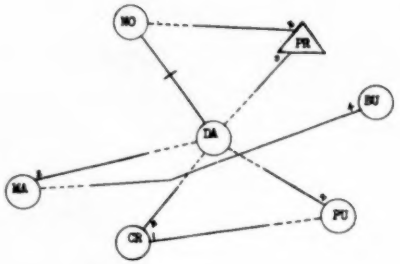
GROUP I



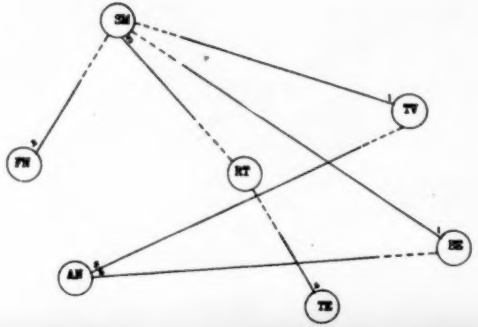
GROUP III



GROUP II



GROUP IV



STRUCTURES OF WORK GROUPS - EVALUATING

GROUP I

GROUP III

STRUCTURES OF WORK GROUPS — EVALUATION

ASSIGNMENT TO WORK-GROUPS

Following each of the work-structures above will be seen the sociograms of the assignments made to each of the work-groups, based upon the choices made in the test. Of course, every effort was made to place each Center member in a group with one or more persons whom he or she had chosen for that specific activity, but 100 per cent satisfaction of all the choices was naturally not possible. However, the optimum of satisfaction under the circumstances was arrived at. An analysis of the degree of satisfaction follows.

Degree of Satisfaction Attained in Assignment to Work-Groups

In the assignment to the three basic groups, it was possible to give 77% of the entire Center membership the satisfaction of being in the same group with at least one of the persons whom they had chosen "first" in either Comforts and Quilts or Rugs. On the other hand, only one person was placed in a basic group which contained none of her choices for either of these activities.

In the four sub-groups, such a high percentage of satisfaction was not possible. This was due partly to the necessity of restricting the sub-groups to the number of persons required by each activity, and partly due to the necessity of maintaining a certain minimum functioning at all times in the three basic groups. With the seven sub-groups for Evaluating, for instance, it was possible in only one of them to give as much as 75% of its members satisfaction of their first choices. The average for the sub-groups in this activity shows only 22% of the members receiving satisfaction of their first choices.

THE VALUE OF SOCIOMETRIC PROCEDURES FOR THIS AND OTHER COMMUNITY PROJECTS

a. For the Investigator-Administrator.

One of the results of the initiation of sociometric procedures in the Self-Help Center was, for the investigator, that the procedure forced a thorough analysis of the work-situations. To be sure, it was illuminating to become aware of the interpersonal structure of the Center, but the application of this

TABLE D
PERCENTAGE OF MEMBERS RECEIVING SATISFACTION OF CHOICES FROM ASSIGNMENT TO WORK-GROUPS

Basic Groups

Basic Group	Membership	% with 1st choice[1] satisfied	% with no choice[1] satisfied	% receiving satisfaction[2] in: 1st choice	2nd choice	3rd choice	4th choice	no choices
A	8	87.5	0	87.5	12.5	0	0	0
B	8	75.0	0	75.0	12.5	0	12.5	0
C	9	66.6	0	66.6	33.3	0	0	0

Sub-Groups

Activity Sub-Group	No. of Sub-groups	Membership	For any one sub-group[2]: % with 1st choice satisfied	% with no choices satisfied	For all sub-groups % receiving satisfaction[2] in: 1st choice	2nd choice	3rd choice	4th choice	no choices
Evaluating	7	3-4	75.0	33.3	22.2	33.3	25.9	0	18.5
Housekeeping	4	6-7	66.6	16.6	38.4	42.2	3.8	3.8	11.5
Children's Center	7	3-4	66.6	33.3	37.5	29.2	4.2	0	29.2
Bookkeeping	8	3-4	66.6	33.3	28.0	16.0	20.0	8.0	28.0

[1] *These figures represent the percentage of the membership of each of the basic groups whose choices were satisfied (i.e. who were placed in the group with the object of their choice). In cases where it was not possible to satisfy first choices, the next highest choice is recorded. Thus, if a member's first choice could not be satisfied but his second choice was capable of satisfaction, the second choice was recorded, regardless of how many other choices of lesser degree were satisfied.*

[2] *These figures represent both the worst and the best results obtained in the sub-groups. Thus, the worst result among the sub-groups for Evaluating provided satisfaction of no choices for as many as 33.3% of the members of one sub-group, while the best result for any one of these sub-groups was that 75% of the members of one sub-group received satisfaction of their first choices. These two percentages do not necessarily refer to the same sub-group.*

[3] *In estimating these results, only the one highest choice receiving satisfaction for each member was taken into consideration.*

information to the actual work-situations proved of little use until the latter were analyzed to see what kinds of inter-personal relationships (closely-knit groups of four, loosely-knit pairs, etc., etc.) were required by the various tasks. Therefore, the administrators of the tests are prepared to state that a sociometric analysis of the work-situations themselves is of equal value with an analysis of the actual inter-personal relationships in a situation which involves people working together. (2)

As a matter of course, the sociometric procedure demonstrated not only the real leaders in the various activities, but also their strength. (3) A glance at the ranking list (Table A) shows clearly that no one person held a leadership position of any consequence in more than one activity. In the first test, leaders appeared, but it was not until the definite criteria of the second test emphasized the various work-situations that the true leaders

for each activity became apparent. Thus, we saw how closely the sociometric procedure can be integrated with the situation in which its results are to be applied in the form of assignments to groups.

Another of the results of the sociometric procedure was to demonstrate how unreliable are intuitive judgments in regard to the inter-personal structure of a group. This is not to say that intuition is always entirely unreliable. The inference is merely that it is not consistently reliable. With the sociometric procedure, however, the information as to the inter-personal structure in the group is provided directly by the members of the group themselves, and its correctness and stability can be checked at intervals by the administration of further sociometric tests. Thus, the assignments can keep in constant step with the dynamic changes which take place in the inter-personal structure of the group.

Perhaps the chief benefit to the investigator-administrator of the sociometric procedure is the certainty which it provides of the actual structure of the group. Without it an administrator can never be sure that the assignments to work-groups have been made in accordance with the real wishes of the group. However, with sociometric assignment and the constant check provided by recurrent sociometric tests, the administrator can feel assured that the group is functioning in a fashion which provides the most harmonious personal relationships.

b. For the Subject-Participants.

It was unfortunate for the accumulation of any concrete results from the work-group assignments made on the basis of the choices received in the second sociometric test that the general economic situation underwent a radical change shortly after the assignments were made. Due to the stepping-up of the Defense Program in industry, a number of jobs became available at this time and the Center membership began to grow less stable as more and more of the members found employment. Under these conditions, a self-help center grew less and less necessary for many of the members. Therefore, the results of the assignments to the work-groups could not be checked, either by observation on the part of the Director or by further sociometric tests. (Under normal circumstances, a third test would have been administered some time after the completion of the eight-week period required for every member of the Center to work at least one week in every one of the activities. This would have provided a check on the accuracy

of the work-assignments and shown where any alterations should be made.)

However, it cannot be said that the benefits of the sociometric procedure were - as a whole - negligible for the subject-participants. (In the groups which were formed as a result of the first sociometric test, tension was low and the members perceived and appreciated this. They welcomed the second test and were looking forward to the assignments as a result of it.) It was, however, (too early to draw any deductions as to the degree of awareness of its own structure which had resulted in the group up to this time) although the indications were that this awareness was growing.

c. For Future Community Projects.

Wherever possible, sociometric procedures should be initiated in community projects at an early stage and continued indefinitely as long as they are needed. No other method has come to light for quickly and accurately finding the true leaders in a group and measuring the strength of their leadership. Furthermore, sociometric procedure provides a scientific accuracy in uncovering the structure of a group; investigator-bias is thereby removed as a factor. One of the chief lessons taught by the use of sociometric procedures in this project was the importance of discovering the personalities from which the tensions in the work-situations were issuing. The use of this technique in commercial and industrial projects should prove equally as valuable as its use in community projects.

A PROCEDURE FOR DETERMINING EXPECTANCY OF IN-CATEGORY SELECTION[1]

Mapheus Smith

University of Kansas

When a population consists of two or more categories of people, completely differentiated according to amount or quality of any single characteristic, whose choices of associates are being studied, it is always desirable to determine if the characteristic in question is a factor in the selection. A simple way in which to make such a determination is to discover whether persons in a given category of the characteristic choose people in the same category more than those in some other category. In cases where in-category selections surpass out-category selections possession of the characteristic in question should be inferred to be a factor in the selection. For example, if rural people visit each other more frequently than they visit urban people, rural characteristics of one or another sort, or of various sorts, combined, should be inferred to be factors in the visiting behavior.

It is obvious, however, that the number of choices made by people is only meaningful in reference to such factor analysis when some criterion of chance expectancy is introduced. That is to say, it is necessary to know what proportions of the total choices of the people should be of an in-category character and what proportion should be out-category, if only chance factors were operative, before it can be learned whether or not the characteristic in question is a factor in the selection.[2]

It seems logical at first glance that the percentage of

[1] *The author is indebted to Dr. Paul F. Lazarsfeld for suggestions concerning the formulas employed.*

[2] *For one approach to this problem see J.L. Moreno and Helen K. Jennings, "Statistics of Social Configurations," Sociometry 1:342-374, 1938.*

chance expectancy of in-category choices would be 50 for 2 categories, 33.3 for 3 categories, 25 for 4 categories, etc. However, this would be true only in cases of equal populations in each category, a very rare occurence in unselected data. (It is therefore necessary to devise a procedure which takes into consideration variations in the proportion of people in the various categories of the total population under consideration.)

A procedure was developed according to the following reasoning: if each member of a total population, n, makes m choices, all of the people's choices will total nm. When n is composed of mutually exclusive categories $C_1, C_2, C_3 \ldots C_s$, the total choices a member will make from each category will be proportional to the size of the category, if chance factors alone are operative. Thus, each member of category C_1 may choose $\frac{mC_1-1}{n-1}$ people from that category, since he cannot choose himself; for category C_2 the total will be $\frac{mC_2-1}{n-1}$; etc. The total number of in-category choices made by the members of all categories together may be expressed thus [1]:

$$\frac{mC_1(C_1-1)}{n-1} + \frac{mC_2(C_2-1)}{n-1} + \frac{mC_3(C_3-1)}{n-1} + \ldots \frac{mC_s(C_s-1)}{n-1} = i.$$

This may be called the index of expected total in-category choices.

The proportion of expected in-category choices, as just formulated, to total choices (mn) may, in turn, be expressed by the formula [2]:

$$\frac{C_1(C_1-1) + C_2(C_2-1) + C_3(C_3-1) + \ldots C_s(C_s-1)}{n(n-1)} = I.$$

This figure may be called the proportion of expected in-category choices to all choices.

The use of such a procedure in connection with observed choices is made by determining the relationship between the expected in-category choices as a percentage of expected total choices, I, on the the one hand, and the percentage of total observed choices that were in-category choices, A, on the other hand. This relationship may be expressed as a simple ratio: $\frac{A}{I}$. If the observed in-category choices exceed the expected in-category choices (as expressed by a ratio of 1.0^+), the criterion of classification into categories should be interpreted as indicating casual relationship between the criterion and the choice. If the expected in-category choices equal or exceed the observed

ones, the criterion should not be interpreted as a casual factor.

Table I, which provides data for an illustration of the procedure, is taken from a recent sociometric study of high school students friendship selections,[3] in which each subject was permitted to choose 0,1,2 or 3 friends. In such a case m would equal $\frac{0+1+2+3}{4}$, or 1.5, if chance factors alone were operative.[4] Substituting, we obtain in formula [2]: $\frac{31x30+72x71}{103x102} = 57.5 = I.$

The ratio of percentage of observed in-category selections (67.9) to percentage of expected in-category selections (57.5) is therefore 1.18, which indicates that place of residence was a factor in friendship selections by the subjects studied.

Table I

Friendship Selections of 103 High School Students, Classified by Place of Residence

Category of Residence	Number in Category	Friendship Selections by Category of Residence			Percentage of Selections by Category of Residence		
		Total	Same	Different	Total	Same	Different
Rural	31	53	21	32	100.0	39.6	60.4
Urban	72	168	129	39	100.0	76.8	23.2
Total	103	221	150	71	100.0	67.9	32.1

The ratio of observed in-category choices to expected in-category choices, when analysis is made according to one criterion,

[3] *J.E. Endacott, "An Analysis of Friendship Selections and Other Social Relations and Activities of 103 Seniors in a Kansas High School," Unpublished M.A. Thesis, University of Kansas, 1942, p. 32.*

[4] *An observed value for m for the entire population might be substituted here, but even better than either the hypothetical or observed mean for the whole population would be the exact mean figure for m in each category. Formula 2 would then read:*

$$\frac{m_1C_1(C_1-1) + m_2C_2(C_2-1) + m_3C_3(C_3-1) + \ldots m_sC_s(C_s-1)}{nm},$$

in which m designates the mean number of choices in all groups, m_1 the mean in category C_1, m_2 the mean in category C_2, etc.

can readily be compared with the ratio obtained by the use of any other criterion on the same population. Consequently, it is possible to determine the comparative contribution made by various factors in "explaining" the choices of people. The same study referred to above revealed a ratio for the criterion of sex of 1.72 to 1.00. Accordingly, sex was considerably more important in determining friendship selections of the subjects in question than was place of residence.[5]

[5] *What may be even more significant to students who desire to determine the importance of a combination of different factors in the same analysis, is the adaptability of this procedure to combinations of criteria, of any number, so long as the categories remain mutually exclusive. Thus, sex and residence may be combined and in-category selections of rural males, rural females, urban males and urban females compared with expected selections. Religious preference, economic status, occupational status and other items could also be added to the same analysis, provided only that the criteria are mutually exclusive and that the combined categories are mutually exclusive.*

A PROPOSED MEASURE OF SOCIAL CONFORMITY[1]

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The degree to which individuals and groups conform to socially established rules, standards, and ideals has been a primary concern of sociology and psychology. Strong conforming tendencies, weak conforming tendencies and complete disorganization of this tendency are of considerable importance in fashioning individual behavior as well as national morale. For this reason, it is regrettable that the workers who followed Allport's (1) lead in this field have more often misfired than hit the mark. It is true that there is much to be said for the critics of Allport's J-curve hypothesis. They have pointed out the apparent arbitrariness of his rule limiting the field of conformity situations to those in which the majority show maximum conformity. They also have been critical of his arbitrary procedure in the selection of step intervals for the conformity continuum. But these criticisms have only tended to obscure the fact that a certain regularity may be observed in the distribution of types of behavior in such different situations as (1) motorists behavior at crossings; (2) religious observances; (3) time-clock punching; and (4) frequency of free association test responses to mention only a few in the field of psychology; and (5) protection tests in rats; (6) number of readmissions to jail; (7) distribution of cities by size; (8) and distribution of income to mention only a few in other fields.

In a recent paper on conformity and the J-curve hypothesis, Waters (10) presents several sets of data, two of which fail to conform to the J-curve, while the third does conform. The data that failed to conform consist of motorists' and pedestrians' behavior at a crossing uninfluenced by the presence of traffic officers or cross traffic, while the data that did conform to the

[1] *Read in part before the Eastern Psychological Ass'n, Providence, R.I. 1942. The author is grateful to Dr. M. M. Bolles and to Dr. T. G. Andrews for reading this manuscript and making many valuable suggestions.*

hypothesis consisted of time-clock records of employees' arrival at work. Waters maintains that the failure of the motorists' and pedestrians' behavior to live up to the J-curve distribution was due to a low degree of strength or potency in the agencies back of, and imposing the regulations at the point of crossing, namely, the officerless traffic light and the unsupervised passenger lanes. On the other hand, the data for the employees did conform to the J-curve hypothesis because of the high degree of potency in the penalty for latecomers.

The issue raised here could be settled only by the provision of a quantitative measure of the potency of a conformity tendency. Allport's suggestion (1) to consider as conformity-behavior only those types of behavior whose distributions show more than 50 percent of the total observations in the extreme conformity category, is a step in the direction of quantification, but it divides conformity situations into a dichotomy of conforming and non-conforming behavior without providing a measure of the degree of conformity.

A Statistical Model

One way of reaching a solution is to fit a curve to the data and use parameters such as measures of skewness or of kurtosis as measures of conformity. If a measure can be found that varies concomitantly with the degree of conformity exhibited by various conformity situations, it could be utilized as an index of the degree of conformity. The measure must be uniquely determined by a given distribution; and only distributions that are very closely similar should have similar measures. Otherwise different degrees of conformity might lead to the same value of the index.

Two statistical indexes of the presence of conformity in a given distribution have been recently proposed. Both of these indexes are postulated on the assumption that the normal distribution indicates the absence of conformity and that deviations from normality indicate the effects of conformity. Peters and Van Voorhis (8) utilize the index of kurtosis (taken about the point of maximum conformity rather than about the mean) while Katzoff (11) utilizes the index of skewness. Both of these indexes indicate whether or not the obtained sample may be regarded as derived from a normal population. Furthermore these indexes of skewness and kurtosis have meaning only when the distributions are continuous and in equal units. In looking for distributions which would approximate the data Allport has provided on conformity

situations, it is important to bear in mind that the scales utilized in recording the observed data are not always in continuous steps nor in equal step units.[2] Consequently it would be desirable to find a family of theoretical distributions that are basically discrete, but that may also be applicable under certain assumptions to continuous data.

Furthermore, it would be desirable that this family of distributions depend only on one parameter. Then the estimate of this parameter could not only represent the degree of conformity, but also enable us to reconstruct the entire distribution. One distribution that satisfies these two criteria is that of Poisson. But the Poisson distribution applies only to situations where the probability of the occurrence of a given event, or its absence, is extremely low ($p = .05$), and the number of different possible discrete events is relatively high. When the probability of the occurrence of a given event is greater than, say, .05, another distribution must be resorted to.

Another distribution that is fully determined by one parameter is the binomial distribution $(p + q)^n$ when the exponent n is held fixed. Once p is given, the value of q is immediately known ($q=1-p$) and the exact shape of the distribution, its mean, median and variance are also known. Furthermore, p varies from 0 to 100 and consequently would be a suitable index of the degree of conformity. Two more properties of this distribution make it seem the ideal curve with which to measure degree of conformity. If n is taken as one less than the number of steps in the conformity continuum under examination, the resulting distribution will consist of the same number of steps as the conformity continuum. Secondly, as the value of p rises from its middle point, 50, the curves generated by the successively increasing values of p pass from a symmetrical curve at $p = 50$ through a J-curve to finally a straight vertical line at $p = 100$. A graphic illustration of the expected scale distributions for several strengths of the conformity tendency are shown in Chart I.

Such a series of curves seem to satisfy the requirements set down by Allport (1) in his J-curve hypothesis.[3] Thirdly, the

[2] *Allport does try to remove the inequality or lack of continuity by providing telic scales. But the original data with which we are concerned are usually discrete.*

[3] *Moving to the right of $p = 50$, the decreasing values of p from 50 to 0 generate the mirror images of the distributions given from 50 to 100.*

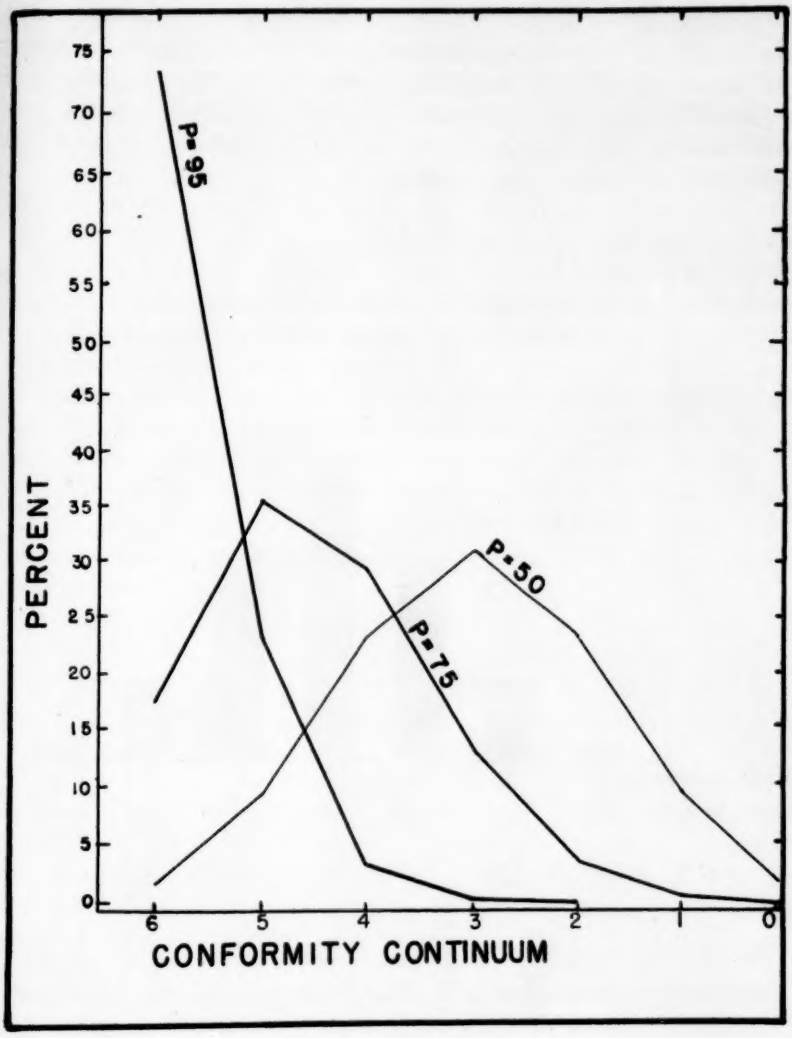


CHART I

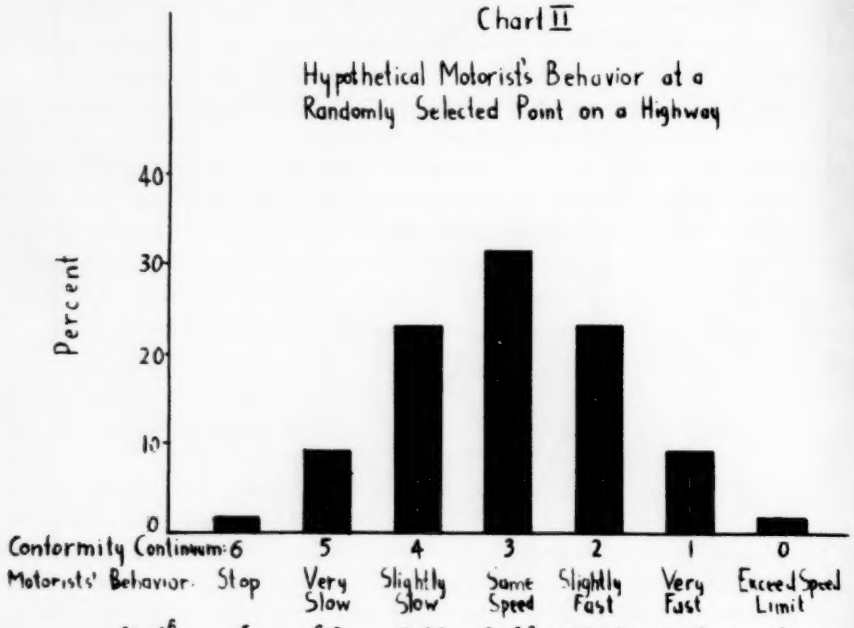
Frequency distribution of each category in a seven step continuum for several values of the conformity tendency; p = 95, 75, and 50.

binomial distribution may be regarded as made up of discrete steps without continuity or equality of units. Steps in conformity scales usually have such characteristics and their representation by continuous distribution is usually unwarranted.

Ordinarily the binomial distribution is introduced with examples from coin tossing experiments, and for the sake of ease of presentation, it will be necessary to discuss it at first from that point of view. If one tosses 6 coins and counts the heads on each toss he would obtain in an infinite series of tosses, the distribution of heads shown in Chart II.

Chart II

Hypothetical Motorist's Behavior at a Randomly Selected Point on a Highway


Percent
40
30
20
10
0
Conformity Continuum: 6 5 4 3 2 1 0
Motorists' Behavior: Stop | Very Slow | Slightly Slow | Same Speed | Slightly Fast | Very Fast | Exceed Speed Limit

$$[p+q]^6 = p^6 + 6p^5q + 15p^4q^2 + 20p^3q^3 + 15p^2q^4 + 6pq^5 + q^6$$

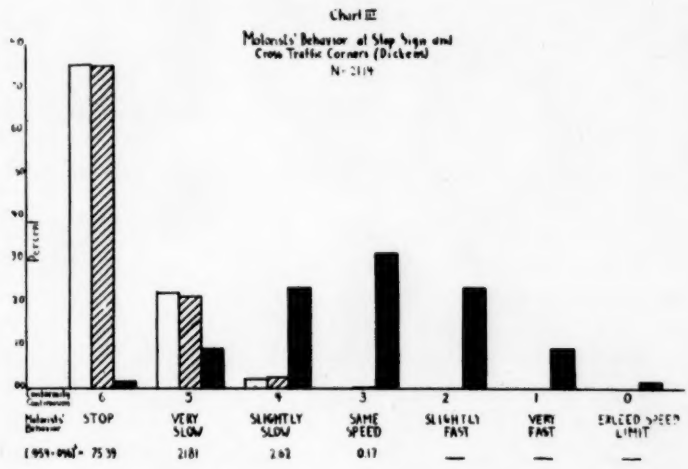
The distribution is symmetrical about its center and drops off above and below that point. This distribution may be regarded as an illustration of what happens in a situation where no conformity producing factor exists. Motorists' behavior at a randomly selected point in the road which is free of any obstructions might well serve as an example that is characterized by this type of distribution.

If only chance factors are operative in influencing motoring, we would expect to find the following different kinds of behavior: The majority of the motorists would pass the point in question without altering their speed, a few would speed up and an equal number probably slow down. Very few because of accident or desire to see the scenery would stop completely and an equal

number would accelerate at the particular point under observation above the usual speed limit.

Under the assumptions of a binomial distribution we could predict the probable number of motorists for each of the seven categories of behavior. The particular distribution which would fit these hypothetical data would be generated by the binomial $(\frac{1}{2}+\frac{1}{2})^6$ which is shown in Chart II. It will be noted that about $1\frac{1}{2}$ percent of the motorists would either come to a dead halt or speed up excessively beyond the usual speed limit at the point in question. The proportion of cases in the other categories would increase gradually towards the center to a maximum of 31 percent in the category of "no change".

Let us now suppose that a traffic light has been installed at the point in question. A distribution of the behavior of motorists at such a point will no longer approximate the symmetical binomial. Instead the distribution will be skewed so that a larger proportion of cases fall in the "stop" or maximum conforming category. Dickens reports observations under such a situation and his data are shown in Chart III.



Legend: (1) *filled-in bars represent the proportional frequencies expected when* $p = 50$.

(2) *hatched bars represent the proportional frequencies when* $p = 95.4$;

(3) *white bars represent the observed proportional frequencies.*

This time the binomial $(\frac{1}{2}+\frac{1}{2})^6$ would provide a very poor fit to the observed data. The binomial $(.954+.046)^6$ however provides a very close fit as shown by the chart. Our statistical model tells us that if we tossed 6 coins whose tendency to fall head was 95.4 percent instead of 50 percent as in the case of a true coin, we would obtain a distribution that approximates closely to the observed. Indeed, the approximation is so good that when the observed data are compared with the theoretically expected, the value of X^2 for this comparison is .02 which has a P value of fully .99.[4] That is, random chance fluctuations could produce differences as large or even larger than the observed differences about 99 out of 100 similar experiments.

In order to eliminate the trial and error involved in finding a value of p that will give a good fit to the observed data, binomial tables can be readily worked out. An example of such a table is shown in Table A. This table gives the proportionate frequencies in each step of the 4 point scale[5] for values of p ranging from 0 to 100 in steps of 5.

These data are shown in Table A.

Table A is read as follows: when the conformity strength is, say, 90 (find 90 in the right hand column under p) the expected proportionate distribution in the 4 steps of the scale is: 72.90% for step 3; 24.30% for 2; 2.70% for 1; and .10% for 0. In actual practice the value of p which gives the best approximation to an observed distribution can be readily found from the table.

A Pressureless Frame of Reference

Thus far we have shown that a blind application of a statistical model has yielded some interesting results. If we were to stop here, our results might be interesting but of limited usefulness. What light, if any, does the model throw on the inner workings of conformity situations?

An analysis of the arguments for and against the J-curve hypothesis as Allport formulated it together with the empirical

[4] *Because of the small frequencies in steps 3-5, they are combined in computing X^2, yielding only 2 degrees of freedom. The agreement here is so good that one might well consider it unusual. Later, when the number of steps is reduced to 4, the agreement is found to have a P value of .75 which is more acceptable.*

[5] *The data for a 7 point scale are available in (4).*

TABLE A[5 a]

The expected proportion of the total number of cases falling in each category for varying strengths of the conformity tendency, p.

(4 Step Scale)

conformity categories

p	3	2	1	0	p
00	———	———	———	100.00	100
01	.00	.03	2.94	97.03	99
02	.00	.12	5.76	94.12	98
03	.00	.26	8.47	91.27	97
04	.01	.46	11.06	88.47	96
05	.02	.71	13.54	85.57	95
06	.02	1.02	15.90	83.06	94
07	.03	1.37	18.16	80.44	93
08	.05	1.77	20.31	77.87	92
09	.07	2.21	22.36	75.36	91
10	.10	2.70	24.30	72.90	90
15	.34	5.74	32.51	61.41	85
20	.80	9.60	38.40	51.20	80
25	1.56	14.06	42.19	42.19	75
30	2.70	18.90	44.10	34.30	70
35	4.29	23.89	44.36	27.46	65
40	6.40	28.80	43.20	21.60	60
45	9.11	33.41	40.84	16.64	55
50	12.50	37.50	37.50	12.50	50
	0	1	2	3	

facts unearthed by statistical fitting of the data leads to two conclusions. Before drawing these conclusions we must distinguish between two aspects of the conformity situation: the pressure towards conformity and the activity on which it is imposed. In motorist's behavior at a stop light, the pressure towards conformity is in the direction of stopping while the activity it is imposed upon is 'driving ahead.' This activity can go on regardless of the existence or non-existence of stop lights. There are other conformity activities, however, that can not or do not go on independently of the pressure towards conformity. For example, people punch time-clocks only when they arrive at work. They don't punch time-clocks as an independent activity. Similarly, people kneel usually only in church, under the pressure of religious conformity. They don't go kneeling around as an independent activity. This distinction may appear trivial at first, but it is of considerable help in clearing up the controversy that now exists about the relationship between the shape of the distribution and the size of the step intervals. Those who are critical of the J-curve hypothesis point out that by a proper selection of step interval sizes, any distribution can be made J-shaped or symmetrical. In order to circumvent this difficulty we must use as our frame of reference a continuum of step intervals which is not created by the pressure of the conformity which we are attempting to measure. Activities like motorists' behavior which can exist in the pressureless [b] state can be observed under conditions in which conformity is not operative and the steps intervals determined in this way can then be applied to the conformity situation of the traffic light. Whatever distortion or skewing appears in the distribution can then be rightfully attributed to the pressure toward conformity.

For data of the second type, such as clock-punching, pressureless data are impossible. Consequently the form of the distribution will not be independent of the size of the step inter-

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[a] *Similar tables are available for scales of 2,3,5,6,7,11,16,21, and 31 steps. For some of these tables I am indebted to Dr. C. Eisenhart who has made available tables which he has collected from the literature and which were subsequently modified to suit our purpose.*

[b] *There are, of course, no absolutely pressureless activities. What we mean by pressureless is that it is independent of the conformity situation which we are measuring.*

vals and we have no independent frame of reference against which to pit the strength of the conformity tendency. A possible solution of this dilemma is to utilize some other function as a measure of degree of conformity under these situations. Perhaps time of rising in the morning would be a good index if adequate data could be made available. The distribution of average rising hours for a group of workers on a non-working day could serve as the frame of reference. It is, of course, possible that even this distribution is not symmetrical. In fact, it may even be rectangular if there is no preferred hour for getting up. But it is at least free of the pressure of getting to work on time. Utilizing this normal frame of reference, the rising hours on a working day could be tabulated and the index of conformity of these data compared with the index of conformity for the non-working day.

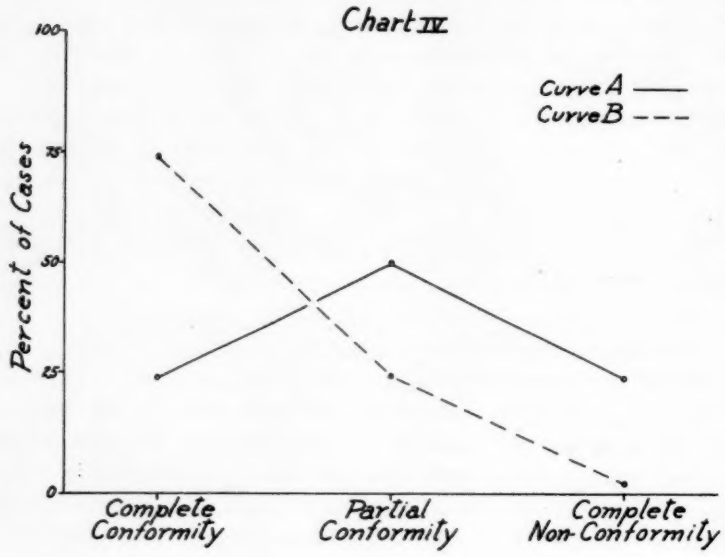
Logical Analysis of Conformity

In order to understand the logic behind the application of the binomial $(p+q)^n$ to conformity behavior, let us analyze into its possible components the act of conformity at a traffic light. Let us first assume that there is only one factor involved in conformity, namely, perception of the light, and that this acts on the all or none principle. That is, everyone who perceives the light conforms, comes to a dead stop, while everyone, who for one reason or another does not perceive the light, fails to conform. If the light is so placed that everyone can not help but see it, everyone will conform and there will be no distribution, simply a vertical line reaching to 100% at conformity.

However, suppose the light is placed in such a position that the probability of perceiving it is not 1.00 but only .75. The distribution will then consist of conformers and non-conformers in the proportion of .75 and .25 or 3 to 1.

Suppose, however, that conformity depends not only on perception of the traffic light but also on the perception of movement of traffic in the opposite lane. The motorist either conforms or does not conform in accordance with the perception or non-perception of a stopped vehicle in the opposite lane. Assuming that the probability of perceiving the light is .50 and the probability of perceiving a stopped vehicle in the opposite lane is also .50, and that the all or none principle applies here also, we can predict the theoretical distribution from the development of the binomial $(.50+.50)\ (.50+.50) = (.50+.50)^2$; this

yields 1/4 conformers, 1/4 non-conformers and 1/2 partial conformers. Instead of having only conformers and non-conformers, we now have an additional category of partial conformers. This distribution curve is shown in Chart IV (curve A).



This distribution is symmetrical. Suppose, however, for the sake of simplifying the problem, that the probability of perceiving the light is .85 and that the probability of perceiving the the traffic in the opposite lane is also .85. Under these conditions the theoretical curve will be generated by the development of the binomial $(.85 + .15)^2$ and the frequencies are as shown in Chart IV (curve B). V

It will be noted that curve B is beginning to show the J shaped effect.

This process can be continued with the introduction of more independent variables. As long as the number of independent variables remains small, the J-shaped effect can be attained. When the number of independent variables increases indefinitely,

V *A more realistic situation in which the two types of perception are unequal in probability will be described later.*

the curve tends to become symmetrical although even such binomials as $(.99+.01)^{100}$ will fail to give perfect symmetry and will more nearly approximate the Poisson distribution than the normal.

It should be noted here that we have postulated independent factors. In reality, the factors influencing the conforming behavior may not be independent of each other. In the second example, the perception of the light and the perception of the traffic stopping in the opposite lane may be correlated because they both involve visual perception. Consequently, we should substitute for the two correlated values, the two equivalent independent and equal values of p (= .85) which would produce the observed distribution. The situation here is somewhat similar to the situation in factor analysis. In the latter, too, we attempt to describe the test behavior of the subjects in terms of independent factors. In contrast with factor analysis where the individual scores and their intercorrelations are known, we know only the resulting behavior, at the stoplight. We can refer it to a number of independent factors, but do not necessarily know the individual variables that entered into the resultant behavior nor their intercorrelations.

It should also be noted that the probability for each of the independent factors is assumed to be the same and that they operate in an all or none manner, like the elementary determiners that Thomson postulates (9). These assumptions are not indispensable and systems can be invented in which the probabilities of factors vary and in which a graded rather than an all or none principle operates. However, here again, we do not know enough about the variables to make such differentiated assumptions, and the assumption of equality is the simplest.

It should also be noted that the number of postulated factors is always equal to one less than the number of steps in the scale of conformity (one less because one category is reserved for the absence of all the factors). This seems like an artifact since the number of categories can ordinarily be readily increased or decreased by further subdivision or reclassification of the data. When we have an independent frame of reference in a "pressureless" form of the behavior under investigation, however, the artificial dependence of conformity on the number of steps in the scale can be discounted.

Subdividing the Conformity Groups

It is, of course, likely that some distribution will arise in the pressure activity which will not correspond to any of the theoretically expected distributions of the binomial. If a redistribution of the data into fewer or more categories in the pressureless activity can be made, a curve may be obtained that will approximate to theoretically expected variation of the binomial distribution which may then be applied to the pressure activity. It is a moot question whether the pressureless frame of reference should always be so constructed that it be represented by a binomial $(.50+.50)^n$. It is conceivable to use slightly skewed binomials such as $(.75+.25)^n$, and then instead of comparing p with .50, compare it with .70. The best practice in this regard is still to be determined.

If such treatment is of no avail, it may be possible to divide the sample into two distributions, each of which is characterized by a given strength of conformity, and when these two distributions are combined, the observed distribution results. An example of such a distribution might be obtained if we were to combine the distributions obtained at a given traffic light at 9 A.M. when school children are crossing and at 10 A.M. when the school traffic is over. The two strengths of conformity will no doubt be different and the combined distribution will probably not correspond to any single strength of c. This method may not lead to a unique solution, but as in factor analysis, the method which leads to psychologically meaningful results should be preferred. This procedure becomes more flexible when the two strengths being combined are not weighted equally. Thus if the school traffic lasts for only one-third of the time in which the traffic is under observation, its conformity strength should be weighted by one-third.

There are several ways of dealing with such combinations of two different degrees of conformity. The simplest is to use the method of the "end-point" fit as described by Muench (5). If we assume that the two subgroups which are combined differ considerably in the degree of conformity that they exhibit (one being very conforming and the other very non-conforming), we may assume that all of the individuals in the extreme conformity category belong in one group and all the individuals of the extreme non-conformity category belong in the second group. We must now determine the relative sizes of the two groups. Assuming that they are equal, we can immediately determine the proportion of cases in the two

extreme groups. Entering Table A with these two proportions we can determine the conformity values that give rise to the observed proportions in the two extreme steps. Utilizing these conformity values, the whole distribution can be reconstructed and tested against the observed distribution by means of x^2. If the value of x^2 turns out to be too high, the relative proportion of cases in the two groups may be altered until a satisfactory fit is obtained.

A more direct method for resolving a given distribution into its components is to utilize the method of moments as described by Muench (6). The moments of a combined distribution can be easily expressed in terms of the moments of the combining subgroups. Muench has shown, following Pearson (7), that if we let V_1, V_2, V_3 represent the first, second and third moments about the zero of the scale, and if we let u_1 be the proportion of cases in group 1, and p_1 the degree of conformity in that group, u_2 the proportion of cases in group 2, and p_2 its degree of conformity, and so forth, then we can find a series of functions, ϕ, such that:

$$\phi_1 = u_1 p_1 + u_2 p_2 + \ldots + u_n p_n$$

$$\phi_2 = u_1 p_1^2 + u_2 p_2^2 + \ldots + u_n p_n^2$$

$$\phi_n = u_1 p_1^n + u_2 p_2^n + \ldots + u_n p_n^n$$

In order to solve for the values of u and p, it is necessary only to calculate a sufficient number of functions. It should be noted that the number of functions cannot exceed the power of the binomial which is being fitted – that is, it cannot exceed (n-1) where n is the number of steps in the conformity scale.

We shall illustrate the application of this method to a situation in which two subgroups are found. The data analyzed are those of Dickens' Clock Record experiment (Allport Fig. 6). The data are shown in Table B.

For the case when only two subgroups are to be found, the equation simplifies:

$$p^2 (\phi_1^2 - \phi_2) + p (\phi_3 - \phi_1 \phi_2) + (\phi_2^2 - \phi_1 \phi_3) = 0$$

which yields two solutions:

$$p = \frac{-(\phi_3 - \phi_1 \phi_2) \pm \sqrt{(\phi_3 - \phi_1 \phi_2)^2 - 4 (\phi_1^2 - \phi_2)(\phi_2^2 - \phi_1 \phi_3)}}{2 (\phi_1^2 - \phi_2)}$$

One of these two p values is p_1, and the second is p_2. The pro-

portion of the total cases characterized by the conformity value p_1 is

$$U = (\phi_1 - p_2) / (p_1 - p_2)$$

By substituting in the above equations, $p_1 = 98.2$ and $p_2 = 69.9$ and $U = .79$ (the proportion of cases characterized by p_1).

TABLE B

Data of Dickens Time Clock Records
Onandaga Pottery Co. (2545 cases, 50 individuals, - piece work).

Categories:	On Time	First ¼hr late	Second ¼hr late	Third ¼hr late	Fourth ¼hr late	Total	V_i*	ϕ_i**
x	0	1	2	3	4			
f	2001	351	150	38	5	2545		
Σfx	0	351	300	114	20	785	.3084500	.0771100
Σfx^2	0	351	600	342	80	1373	.5394929	.0192536
Σfx^3	0	351	1200	1026	320	2897	1.1383182	.0056975
Exp.	1984	372	145	40	4	2545		

*$V_i = \Sigma f x^i / \Sigma f$

**$\phi_1 = V_1 / n$

$\phi_2 = (V_2 - V_1) / n(n-1)$

$\phi_3 = (V_3 - 3V_2 + 2V_1) / n(n-1)(n-2)$

When the observed values, shown in the first line of Table B, are compared with the theoretically expected based on the above analysis (shown in the last line of Table B), the value of X^2 is found to be 2.51, which corresponds to a P value of .60.[9]

It should be pointed out here that the utilization of the method of moments does not necessarily introduce the assumptions of continuity and equality of units in the observed distribution. As long as we utilize the same step intervals in comparing the pressure and pressureless situations, the temporary assumption of continuity and equality of units required for the method of mo-

[8] *It is possible to differentiate between* p_1 *and* p_2 *by noting that*

$$p_1 = (\phi_2 - \phi_1 p_2) / (\phi_1 - p_2)$$

[9] *Recently Professor Hotelling in a private communication indicated the method for dealing with distributions that may be resolved into three conformity factors and I am indebted to Mr. Henry Goldberg for assistance in elaborating this suggestion.*

ments is only for arithmetical convenience which may be cast aside as soon as the answer is obtained.

Another way of dealing with the situation when no theoretically expected binomial distribution fits the data is to consider the different factors as having unequal probabilities. The situation when the tendency towards conformity, and chance, are the only factors affecting the result might be taken as an example. Let the former have a strength of 90 in the given community and let the chance factor have a strength of 50 in the direction of conformity. The resulting distribution will be generated by the equation (.90 + .10) (.50 + .50) and will consist of the following percentages for the three steps of conformity: 45.0 for the highest degree of conformity; 50.0 percent for the middle degree of conformity and 5 percent for the lowest degree of conformity. Similar developments could be made for three factors leading to 4 step scales and so forth. By means of this new departure, it might be profitable to investigate Allport's (1) hypothetical structure of behavior in a conformity situation as composed of the following underlying factors: (1) conformity producing agents, (2) biological and physiological inertia, (3) individual difference in ability and personality and (4) simple chance. We know the value of p for chance, .50, and we could postulate different values for the other factors in accordance with the type of community and situation. If we could keep all but one factor constant, the change in the distribution would give us an idea of the extent of the change in the variable that was experimentally altered. This process in our method is paralleled in factor analysis by the process of determining the nature of a given factor from its correlation with all the tests. By means of these three methods: (1) subdivision of groups; (2) changes in the values of the conformity producing strengths in the different factors and (3) removing the independence between the factors, it should be possible to fit almost any distribution that may arise.

Since the value of p as a measure of degree of conformity is dependent upon its deviation from 50, it might be well to utilize $c = (p - 50)/50$ as a measure of conformity. This coefficient of conformity will be equal to 100 when maximum conformity exists and to 0 when zero conformity exists. As p drops below 50, c becomes negative and indicates the degree of non-conformity.

The above method of treatment of categorized qualitative data is, of course, not limited to investigations of conformity. Indeed it was developed in connection with a research in graphol-

ogy where a distribution of frequencies on a bipolar continuum had to be interpreted in terms of the strength of the tendency that distributed the measures between the two poles. Other situations involving bipolar factors ought to lend themselves to similar treatment.[19]

Practical Application

The method of analysis outlined previously has been applied to the data given by Allport (1) in his classic paper dealing with J-shaped curves. Since we did not have access to the original material we could not invent in each case a pressureless frame of reference. For this reason our analyses have more didactic than intrinsic value. When only one investigation was presented without a comparative situation for contrast, we assumed that the step intervals given by Allport would have formed a synemetrical binomial in a situation from which the pressure towards conforming was absent. Hence, the degree to which the obtained p value deviated from 50 was a measure of the degree of conformity. Whenever two contrasting situations were presented, the above assumption was not necessary since our purpose was simply to determine which distribution showed more conformity. The results are shown in tabular form in Table C.

Table C is read as follows: For situation A, which is given as Figure 1 in Allport's (1) work, there were 2114 cases and the number of categories in the scale was 4. After examining the distribution it was found that the binomial $(.91+.09)^3$ was a very good fit for the observed data and the goodness of the fit was represented by $X^2 = 0.52$ which has a probability (P) of .75. The coefficient of conformity is obtained by subtracting from the obtained p value, 91, the p value representing absence of conformity, 50, and dividing by 50 to obtain the result of .82. The other lines in the table are read similarly.

Motorist's Behavior

Situation A (Motorist's behavior at Stop Sign and Cross-Traffic Corner-Dickens) is characterized by a conformity coefficient of .82 and the goodness of the fit obtained with this

[19] *Other notable examples that may lend themselves to analysis by this method are (1) the degree of wealth concentration in various countries (Pareto's line); (2) degree of concentration of death at certain ages in various localities, and other data that may be analyzed from the point of view of either concentration or conformity.*

TABLE C

Values of conformity index, c, corresponding to the conformity situations described by Allport (1)

Situation Motorist's Behavior	Figure	Number of Cases	Number of Categories	Strength of Conformity Tendency, p	I^2	P	Coefficient of Conformity, c
A. Dickens: Motorists' behavior at Stop Sign and Cross-traffic Corner	1	2114	4	91	0.52	.75	.82
B. Behavior of Motorists at Cross Traffic Corner, No Traffic Signal. . . .	1B	208	4	56	4.18	.25	.12
C. Dickens: Motorists' Behavior at Corner with Red Light and Policeman but no Cross-traffic	2	102 (97) (5)	4	99 40	-	-*	.98 -.20
Pedestrian Behavior							
D. Gartner: Pedestrians' Reaction to Red Light in City with Enforcement Traffic Laws	3	124	3	86	5.36	.07	.72
E. Gartner: Reaction of Pedestrians to Red Light Without Enforcement	3B	126	3	59	7.10	.03	.18
Time Clock Record							
F. Dickens: Time Clock Records, Onandaga Pottery Company Day Work	5	1277 (1162) (115)	5	97 82	0.83	.85	.94 .64
G. Dickens: Time Clock Records, Onandaga Pottery Company Piece Work	6	2545 (2012) (533)	5	98 70	2.51	.60	.96 .40
Miscellaneous							
H.Loeb: CWA Registration, Syracuse	7	271	5	91	2.30	.60	.82
I. Zamborowsky: Degree of Participation in the Holy Water Sacramental of Catholic Church Cathedral - Syracuse	8	1557 (1111) (446)	5	97 02	6.49	.20	.94 -.96

*The dash (-) indicates agreement so good that I^2 is negligible..

strength of conformity is expressed by P = .75. [11]

When the traffic sign is not operative as in Situation B (Motorist's behavior at Stop Sign and Cross Traffic Corner) the conformity coefficient drops to 12, probably not significantly different from chance conformity.

Situation C (Motorist's behavior at corner with red light and policeman but no cross traffic) can not be characterized by a single conformity strength. After some preliminary analyses, it was found that the best way to measure the strength of conformity was to divide the distribution into two parts. The first, consisting of 97 cases had a conformity index of 98 while the second, consisting of only 5 cases had a conformity index of only -.20. Since the group is so small, it is difficult to determine the adequacy of this analysis, but the hypothesis presented is not contradicted by the data.

It is clear that the introduction of a traffic signal in-

[11] *Any fit that has a probability between .05 and .95 may be regarded as a good fit. The nearer P is to .50, the better the fit.*

creases the degree of conformity from .12 to .82. When a police man is added to the scene the degree of conformity rises still higher to .98.

Pedestrian Behavior

Situation D (Pedestrian's Reaction to Red Light in City with Enforcement of Traffic Laws–Gartner) shows a conformity coefficient of .72 and when the enforcement powers are removed as in situation E, the coefficient drops to .18. The results for this comparison are not very significant because of the extremely poor fit of the binomial.

Time Clock Records

The distribution of time clock records for the day workers (F) as well as for the piece workers (G) could not be measured by one conformity coefficient. The majority of the data in each case was characterized by a rather high coefficient, .94 and .96 for the day and piece work records respectively. However, the minority of the data which consisted of 12 percent of the day work records and of about 20 percent of the piece work records differed considerably in their conformity coefficients; the day work records show a coefficient of .64 and the piece work only, .40. Thus, piece work seems to be characterized by a considerable drop in degree of conformity, as measured by the size of the non-conforming minority as well as by their degree of conformity.

Miscellaneous Situations

Situation H (CWA Registration, Syracuse) shows a conformity coefficient of .82.

Situation I (Degree of Participation in Holy Water Sacramental) has to be divided into two parts. Group A with 1111 individuals is characterized by a conformity coefficient of .94, while group B with 446 individuals is characterized by a conformity coefficient of –.96.

Several other series of observations were selected at random from the literature. Allport and Solomon (2) give data on the length of 200 conversations in church scaled on the basis of the annoyance value of such conversations. Utilizing a seven point continuum, it was found that the observations could be regarded as belonging to three subgroups. The first with 164 observations had a maximum conformity strength with a coefficient of 100. The second consisting of 32 conversations had a conformity coefficient of .40. The third consisted of 4 conversations which exhibited a coefficient of –.90.

The data recently presented by Britt (3) for 12,616 motorists observed in Washington, D.C., at certain selected places, indicated that for 12,032 the conformity coefficient was .91, while for the remaining 584, the coefficient was -.40. For 1264 chauffeurs included in the above group, the coefficient was .92 while for the remaining 42 chauffeurs, it was -.16.

In comparing two strengths of conformity it would be well to be able to compare them statistically to determine the significance of the difference that may be found between them. Since this strength is essentially the value of p in the binomial $(p+q)^n$, its standard error is simply $s_p = \sqrt{np(100-p)/N}$ where N is the size of the sample, and n is one less than the number of steps in the scale.

Allport's Rule of 50%

We can now examine Allport's rule that the term 'conformity situation' should be limited to only those situations in which more than 50 percent of all the cases fall in the first step or position of the scale. According to Allport, the J-curve will appear only in such situations. The above requirement can be translated into mathematical terms by noting that the proportionate frequency in the first step s_1 is p^n where p is the value of the conformity tendency and n is one less than the number of steps in the scale. Letting n' represent the number of steps in the scale, we note that when $s_1 = p^{(n'-1)} = .50$, $p = \sqrt[n'-1]{.50} = .50$. Thus, for a two step scale, p = .50; for a three step scale, $p = \sqrt{.50} = .71$; for a four step scale, $p = \sqrt[3]{.50} = .80$ and so forth. That is to say, according to Allport, conformity situations consist of those in which the p values equal or exceed .50 for a 2 step scale; .70 for a 3 step scale, .80 for a 4 step scale, etc.

Let us now examine the mathematical requirements for the production of a J-curve. The essential property of a J-curve seems to be that the frequencies decline from the first step to the last step on the conformity continuum. In general, the requirement might be stated that the proportionate frequency of the first step should exceed the proportionate frequency of the second step. When that is the case, it can easily be shown that all the remaining frequencies will decline going from left to right. The mathematical statement of the above requirement is that $p^{(n'-1)} > (n'-1)\, p^{(n'-2)}(100-p.)$. The values of p which change the above inequality into an equation are the limiting cases for the J-curve.

It can be readily shown that the required value of p is $p = \frac{n'-1}{n'}$ or n/n'. The corresponding values of p which satisfy Allport's rule of 50 percent and those which satisfy the J-curve requirement are given in Chart V.

It is clear from Chart V that Allport's rule is on the conservative side, since values of the conformity tendency lower than those required to satisfy his criterion will still yield distributions that will have a tendency towards the J shape. If Allport's rule had actually separated the J shaped from the non-J shaped distributions, the curve for the proportion of perfect conformers, s, required to make a J shaped distribution, would be a straight line at 50% shown as "Allport's Rule" in the graph. Instead the proportion of perfect conformers dips below this line and for an 11 step scale drops to nearly 40%. The upper curve shows the actual value of p separating J shaped from non-J shaped distributions.

Summary:

A statistical model based on the binomial distribution has been found to generate the types of distributions which are found in the field of conformity behavior. Since the binomial distribution depends on only one parameter, p, when the power, n, is kept constant, the value of p that generates the distribution may be taken as a measure of the degree of conformity. This method has been applied to conformity situations in the fields of motorist's behavior.

It should be pointed out that the binomial is of value in other situations in which bi polar traits are considered - such as extroversion - introversion. Furthermore, instead of treating the observations of a group in one situation, the observation of one individual in many situations can also be treated, and this has been done in a graphological study of the contraction - release tendency in handwriting (4). It has also been used in measuring degree of communality on the Kent-Rosanoff Test, and succession and mental approach tendencies on the Rorschach.

On the basis of this analysis it seems preferable to limit the discussion of conformity situations to those in which conformity can be imposed on an otherwise smoothly flowing activity like motoring. Situations which are created by the pressure of the conformity situation under investigation, can not be measured by this method because there is no independent frame of reference for them.

As a result of the application of this method the distinguishing of J-curves from less asymmetrical curves becomes a quantitative rather than a qualitative distinction since the differences between such curves can be expressed in terms of a graduated unit, c, the conformity index, varying from 0 to 100. It is likely that an extension of this method may do for qualitative data what factor analysis does for quantitative data. In brief, the proposed method for measuring social conformity (1) extends the boundaries of the conformity concept from its complete absence to its perfect presence; (2) provides a numerical index for graduating its intensity; and (3) removes the criticism of arbitrariness of units by requiring that the units of the scale be based on an independent frame of reference in behavior free of the particular conformity pressure that is under investigation.

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SOME APPLICATIONS OF SOCIOMETRIC TECHNIQUES TO COMMUNITY ORGANIZATION [1]

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Four years ago the United States Office of Education assisted with the organization of four experimental community programs of family life education, two in cities and two in rural counties in the South and West. These programs are now all well established, each playing a significant part in the total war effort of its community. They were frankly set up as laboratories in order that persons interested in community organization who wished to do so might have opportunities to study closely the details of their development.

This pioneering has paid good dividends. Each program has made important contributions to our understanding of the processes involved in community organization. To take stock, as it were, of this experiment, a ten day study conference on community organization for family life education was held in July, 1942 at the University of Chicago under the joint auspices of the University and the U.S. Office of Education. Dr. J. L. Moreno, Director of the Sociometric Institute, was special consultant for this conference. His help was especially requested in connection with two problems reported oftener than any others by members of the conference: (1) the problem of getting representative membership on community councils and committees, and (2) the pr em of finding potential leaders and helping them to serve their com-

[1] *This article is edited and condensed from the Report of the Study Conference on Community Organization for Family Life Education, sponsored jointly by the University of Chicago and the United States Office of Education, Chicago, Illinois, July 1942. The author was conference leader and writer of the report.*

munities. Since the report of the conference is not available for general distribution, it seems desirable to give here the high points of the discussions which centered about these two problems.

Representation on councils and committees: It is obvious that most people work best together (1) when they are clear about and agreed as to their general purposes; (2) when they feel, individually, that they have something to contribute to the business at hand; (3) when they have a common sense of the importance of what they are doing; (4) when they feel a responsibility to others whom they actually represent; (5) when they enjoy working with each other. This indicates three major problems in relation to council or committee organization: (1) the problem of getting onto councils or committees those who really are the choice of the people they represent; (2) the problem of getting onto councils and committees those qualified to deal with the matters which they will have to handle; (3) the problem of bringing together those who want to work with each other on given assignments. With all three of these problems sociometry has help to give.

Some progress toward the solution of all three of these problems is made when the natural groupings of people in communities can be used as channels for getting new jobs done. Even in small communities, we find people arranging themselves into sub-groups on the basis of kinship, race, religion, occupation, place of residence, avocational interests or special concerns. These natural sub-groupings are basic in sound community organization. They underlie, and are stronger than, any artificial organizational arrangements because they represent the gravitation toward a point or focus of individuals who are drawn together by the feeling that they want to associate. Sociometry calls these natural sub-groupings networks.

Persons interested in promoting community organization must know the networks in their communities, the degrees of relationship (or lack of it) between them, and the individuals who are keys to them. Techniques must be developed to bring community workers into touch with these deeper structures. Community organization is essentially the process of opening up channels between networks so that increasing numbers of people can work together smoothly on problems of common concern. This means finding methods of committee or council selection that will permit members of groups to choose those who will represent them and at the same time permit those who may be called upon to serve to register

their choice of persons with whom they would like to work.

Dr. Moreno demonstrated a simple technique which meets both of these requirements and described a recent experiment in which this technique was used to elect members and chairmen for a local defense council and five sub-committees.[2] Following are the steps involved in the procedures described by Dr. Moreno and used in the experiment mentioned above.

1. Frame a clear, concise statement of the purpose of the choosing or voting. This should be done cooperatively by a small planning group. If the object is to choose a council or committee, the reasons for having such a body should be clearly stated. There should be a careful consideration of its makeup, and a clear understanding of what community groups, areas, or interests should be represented, and why.
2. Decide on the qualities or qualifications which members of the council or committee should have.
3. Decide what groups or individuals should choose representatives. Prepare accurate, complete lists of those to be asked to vote. Special care should be taken not to overlook minority groups or unpopular individuals if they should naturally be included.
4. Prepare the necessary forms for recording choices or votes. The criteria for choosing should be stated on each ballot.
5. Make practical plans for distributing and collecting forms that will reach all the people who should be reached.
6. Prepare a list of capable people whose help will surely be needed. Such a list will enable those analyzing the returns from the popular voting to give proper weighting to certain names in cases where the voting is not conclusive.
7. Make adequate provision for compiling and analyzing returns.
8. Make a careful, thorough interpretation of the project and the voting plan to the individuals or groups who are to be asked to choose representatives.

[2] *See separate report by Rose Cologne in one of the next issues of "Sociometry."*

9. Carry out the plan.

Leadership. The problem of finding potential leaders and helping them to serve their communities is a problem of enormous importance in a democratic society where each individual has a right to help create the conditions under which he lives. Here again Dr. Moreno was able to give valuable assistance to the conference group. Sociometric experiments have shown that there are many different kinds of leaders in community life. Persons interested in community organization need to learn to identify certain common types in order to use effectively the different kinds of help available. Sociometry distinguishes:

1. The popular leader, an individual who is often chosen. Such a person may or may not be useful in community organization, depending on the sociometric status of those who choose him. If he is chosen by twenty more or less isolated individuals, he is probably not so important as the person chosen by five individuals each of whom is chosen by several others.
2. The key person, an individual whose natural following reaches into areas important for the project or program under consideration. Such an individual may not be either popular or widely known, but has significant influence through his connections.
3. The folk or group leader, an individual who is the spontaneous [3] choice of his group or neighborhood. The influence of such a leader may not extend beyond his own following.
4. The leader among leaders, an individual who is chosen by other leaders. The influence of such an individual extends to all groups represented by the leaders who follow him.
5. The "brain-truster" or "expert," an individual whose special knowledge or experience gives him authority in any field. "Experts" are more or less of a problem in community organization. Their knowledge alone does not give them qualities of leadership. Their help is needed, but they usually serve better as advisers than as administrators or members of policy-making groups.

[3] *"Spontaneous" as here used means "freely flowing," "natural," "upwelling from the roots of being"-not "impulsive."*

The technique which sociometry has developed for identifying types of leadership is called the sociogram.[1] This is simply a device for mapping the feelings of attraction or rejection which members of a group have for each other. A person chosen for any given purpose by members of a group is, ipso facto, a leader of some kind. The nature of the leadership is revealed by a study of the group status of those who choose and those who reject him.

To show how this choice technique is used to reveal the underlying emotional structure of a group, Dr. Moreno demonstrated it at the conference in a simple situation where enjoyment would probably depend upon congenial company. He asked each member of the conference to write his first, second and third choice of a dinner companion for a conference dinner, this companion to be chosen from among those present. To seat people with the greatest possible satisfaction to all concerned, Dr. Moreno explained, rejections as well as choices should be considered, but the group voted not to record the names of those they would not want to sit with. Dr. Moreno commented that because people are so often unable to accept the fact that liking and not liking are both normal human reactions, the objective study of human relations is still very difficult.

The analysis of the choices proved interesting. When they were tabulated, it was found that twelve of the twenty-eight people choosing were themselves unchosen. Three people received most of the choices. A chart of the group with arrows going out from each individual to the person of his choice showed at a glance those most often chosen — "stars of attraction"— and those not chosen at all —"isolates." The inter-relationships between individuals in any group can be diagrammed in this way with reference to any valid criterion.

Although the sociometric techniques described by Dr. Moreno appear to be quite simple, there are certain points in regard to their use which should be kept in mind:

1. When sociometric techniques are used it must always be for a purpose, i.e., in a situation where it is important for the people involved to express their personal wishes or feelings.
2. Choices must always be made with reference to specific criteria. These criteria depend upon the situation. One does not ask people to indicate choices "for a public

[1] *J. L. Moreno, Who Shall Survive? 1934, p. 30 and p. 432.*

office," for example, but for a particular post, occasion or responsibility. The character or requirements of the situation should always be described clearly so that those who are to choose may do so intelligently. Sometimes the criterion for selection is training, sometimes it is experience, sometimes it is personality. Sometimes there are several criteria for one selection.

3. There are no sociometric tests of universal applicability. Tests and testing procedures must be invented or adapted to meet the needs of the particular situation for which they are required.
4. A sociometric chart (sociogram) of the findings from a sociometric test has meaning for only one situation, the situation it represents.
5. People who are not ready or willing to cooperate in the sociometric appraisal of a situation (i.e., to make choices) should never be forced to do so.
6. Choices are probably influenced by many factors including (a) how widely acquainted the individual is who is doing the choosing, (b) the actual number of representatives of a group present when choices are made, (c) physical qualities which influence the situation.
7. It is just as important to know about the rejections as it is to know about the attractions between people in studying a social situation. Gradually we must educate ourselves and those with whom we work to see that there is no disgrace in not being chosen for certain purposes. We cannot solve the big problems unless we learn to be objective about our data. We cannot work without facts, and among the facts of human experience are dislike and jealousy of other persons.
8. In nearly every community there are group rejections — cleavages between races, creeds, nationalities. These cleavages are facts, represent complicated psychological problems, and need to be handled with insight and care by both sides involved. It is important that leaders of minorities be educated in modesty so that they will not hurt the groups to which they belong by demanding kinds of recognition which the majority group is not able to give.

Members of the Chicago conference, – all administrators facing serious responsibilities in connection with community programs of education, – welcomed the opportunity which the conference afforded to become familiar with the sociometric approach to some of their most perplexing problems. (Any technique which enables a person responsible for community organization to look below the surface of community life and grasp the nature of important community relationships in a quick and accurate manner is an instrument of great value.) In skillful hands it becomes a key which can unlock vast stores of human energy now, tragically, tied up by the misunderstandings and disappointments, the feelings of hostility, suspicion, fear and aggression, which so often arise when the underlying psychological organization of communities is disregarded in the development of new programs or projects. In sociometry our Chicago group saw the promise of a highly useful new methodology for democracy.

ANNOUNCEMENTS

A Symposium on Sociometry

At the cancelled 1942 meeting of the American Sociological Society, section on Sociometry, papers on the significance of sociometry by Read Bain and Stuart C. Dodd were scheduled to be read. They have been chosen to become the center of a symposium on sociometry to which the entire May issue of SOCIOMETRY will be devoted. Definition and concept of Sociometry as well as its significance to the present world situation is the theme. It will contain contributions by: Howard Becker, Ernest W. Burgess, F. Stuart Chapin, Joan H. Criswell, Helen H. Jennings, Paul F. Lazarsfeld, George A. Lundberg, Charles P. Loomis, George P. Murdock, Theodore M. Newcomb, Stuart A. Queen, Dwight Sanderson, Pitirim Sorokin, Gardner Murphy, and Leslie D. Zeleny. J.L. Moreno will close the issue with a paper in which he will attempt to synthesize and summarize the various points of view.

Section on Sociometry, 1943

Chairman of the section on Sociometry, in the 1943 American Sociological Society meeting, is Charles P. Loomis, Department of Agriculture, Bureau of Agricultural Economics, Washington, D.C. Papers may be sent to him.

Sociometric Institute

Seminars on Sociometry, Psychodrama, and allied methods, given by members of the staff in weekly sessions at the Institute, are to be continued. Applications should be sent to the Sociometric Institute, 101 Park Avenue, New York, N.Y.

REPORTS

Sociometric Institute, 1942

Since the opening of the Sociometric Institute in May 1942, more than 3,000 students have been admitted to seminars and sessions free of charge. Among the schools and institutions represented are the following: Teachers College, Columbia University, New York Medical College, New York University, New York Psychiatric Institute, College of the City of New York, Hunter College, Brooklyn College, Queens College, New York School of Social Work, Chicago University, George Washington University, Syracuse University, Y.W.C.A., American Red Cross, Boy Scouts of America, Institute for Oral and Visual Education, Service Bureau for Intercultural Education, Metropolitan Life Insurance, Penn Mutual Life Insurance, Bellevue Hospital, Lincoln Memorial Hospital, Kings County Hospital, Rockland State Hospital, Essex County Hospital, Harlem Valley Hospital, etc.

A Sociometric Library

A reference library of Sociometric publications has been started as an aid to research for students. A copy of any contribution to Sociometry, published or unpublished, printed, mimeographed or in manuscript form would be appreciated. Sociometric charts, sociograms and diagrams of sociometric scales of any variety will be collected and made available for research.

Sociometric Test in Officer Candidate Schools

An informal sociometric procedure is used in Officer Candidate Schools. According to this procedure, platoon leaders rank men in their platoons as to their leadership ability. These ratings may then be used by instructors in determining the leadership qualifications of the officer candidates.

MAN IS THE MEASURE

Read Bain
Miami University, Oxford, Ohio

Man in the Dark. Writing the second "Measure" is a venture in the dark. That the editors liked the first installment is encouraging but not convincing because they naturally would like their own idea. The 64 dollar question is whether the readers, if any, think Sociometry is wasting its space and I, my time. I was strongly ambivalent to the editorial invitation but the positive impulse prevailed, I suppose, because I hoped people whose approval I value would approve; and perhaps because I was ambitious to be the first scholarly journal "columnist." Both motives are egotic, to be sure, but it is socialized egotism because I will cease spouting gladly if no one wants to read Read. Until this is ascertained, I must continue, but I am a Man in the Dark.

This provokes the reflection that we all are children of darkness. The editors know that man does not live by facts and figures along; they know there is an essential moment-by-moment newness, uniqueness, and uncertainty about man and all other natural phenomena. To one, this means Art - so he plays the a-kordeen; to one, it means the spontaneous creative Moment; to another, it means the Sweet Mystery of Life; to me, it means our public and private lives are mostly lived in darkness.

Privately, we never know clearly who we are nor why we act nor what our present words and deeds portend for the future though we have faith that the present is part of the past and pregnant with the future even to the edge of doom. It is easy to say "Know thyself" and "To thine own self be true" but to know ourselves we must know other selves and here the pall of everlasting darkness falls. This One Woman whom we have loved for years is still a Dark Continent Unexplored; these noble friends bound to our souls with hoops of steel are still terra incognita et infirma; the brilliant minds which strike small sparks in this Stygian world are still Darkness Unrevealed.

Publicly, we also fight phantoms in the Dark. Though we plan as wisely as we may, the brute facts of the Unintended and the Unforseen explode in our faces. We pan prohibition - and get bootlegging: we save all our lives - and get inflation or a busted bank; we plan to be a lawyer - and become a school teacher; we wage a war to end war and make democracy safe - and get totalitarian regimentation and total war befouling the land, sea, and sky on every segment of the earth; we fight this latest war for the Four Splendid Freedoms - and what grisly horrors shall we get? We see the thunderheads of stupidity and cupidity already rising to wash away in bloody flood the fantasy foundations of that Bright New World we have dreamed.

So man wonders and wanders in the Mighty Gloom, fidgets and flounders in the Doomful Dark. He slays the ancient demons of Fear and Dread, blots out the childish cruel gods, and lights the small candle of Faith in Science. The flickering rays of science nick the surface of the Cosmic Gloom and reveal hitherto unsuspected Monsters in the Dark. The new faith of Science has not yet disposed of the fearsome gods it has deposed: the homocentric world has not yet been won. Science seems to be man's sole hope - but very few are able to prophesy with faith and power and vision in the Name of Holy Science: so this also may be a hopeless Hope. Will the Scientist as Technician sometime give place to the Scientist as Leader, as Man of Vision and Creative Energy? This is the modern statement of the old Platonic Dream about kings and philosophers: Scientists who are Poets, Priests, Prophets, and Men of Action. The priests of science perform the ritual in classroom and laboratory; the poet proclaims the beauty and the vision of science; the man of action is the engineer, the applied scientist in general; the prophet performs the esoteric functions of "pure" science in theory and research, receives the new revelations that keep the Faith burning in the heart and mind of man.

Thus at long last man may master the machine and compel technology to serve teleology; thus he may create new Supreme and Enduring Values to light the lives of millions now wandering in darkness while they nurse the pale ghosts of their decadent gods; thus heroic living and dignified dying may come again; Virtus and Virilis, Teleos and Philos, may be put back into the heart and center of life. This is man's great undying Hope - but how much conviction does it carry to how many men as this year of disgrace, 1942, fades into the oblivion of the endless Dark?

How long, O Man, must millions die for noble verbal "causes" while their children eat the moldy husks of betrayal, disillusion, and disaster? How long must stupidity and cupidity, cruelty and corruption, ignorance and ill-faith, distort and defeat man's blundering quest to become Man? Will men now living ever see this Promised Land? Where is Moses? Where are the Children of Light in this Age of Darkness?

Making Men - and Money. In 1938, nearly 60 percent of all prisoners were "conditionally released"; for the most part, this means they were paroled. This sounds good until we remember the main reason for "paroling" them was to make room for incoming prisoners. In most cases, both preparole investigation and post-parole supervision are very inadequate.

It has been known for years that many men eventually paroled or released by expiration of sentence would have done much better in society if they had been paroled much earlier under proper supervision. Many when sentenced should be placed on probation rather than in prison. We are now beginning to learn that prison is the worst place we can put certain classes of criminals. Far from "curing" the prisoner, long incarceration probably is one of the main reasons for our enormous rates of recidivism. Most prisons probably make more habitual criminals than they cure. We do not know, though we know how to find out, how many men now in prison could be safely released at once. Perhaps 25 percent, or about 40,000, is not too wild a guess. Haynes estimates it costs about $500.00 per prisoner per year. Proper parole costs about $50.00 a year. If we allow a salary of $3,000.00 a year and case load of sixty, this would mean a direct saving of $18,000,000 a year to say nothing of the indirect savings from physical plant, lower police and legal costs, the value of the productive labor, and the still greater intangible values coming from the rehabilitation of the criminal and his family with a consequent reduction in original and recidivistic crime. Within a generation, we probably could reduce the permanent prison population by one half, reduce the size and improve the quality of prisons, and use them to make men instead of chronic criminals and misfits.

Another great opportunity to make men and money is revealed by the recent report of the New York Temporary Committee on State Hospital Problems, 105 E. 22nd St., New York. There are now 73,000 patients in residence. If the average increase of the preceding ten years had continued during the last two and a fourth years, there would now be 76,710 patients. This would have cost

the state over one and a third million for care and about fifteen million for additional plant. It also was found that about 8 percent, or 5840, could be released under proper supervision. Allowing sixty patients per social worker and a salary of $3,000 a year, this would save the state about $2,000,000 for care and over $20,000,000 for plant. It costs New York $386.46 per patient and about $4,000 for each new bed. Applying these figures to the 500,000 mental patients in the United States, the annual savings would be about $13,500,000 on care and about $160,000,000 on plant. The patients and their families would be much happier and many of the patients would become permanently self-supporting and mentally well adjusted. With experience in this sort of care and the rapidly improving techniques of mental therapy (shock treatment, psychosurgery, and psychiatry) and mental hygiene, these figures might easily be doubled or tripled in a generation.

Nothing need be said about the great indirect savings in productive efficiency and length of life if we were to socialize medicine so as to give adequate medical care to the entire population. This could be done without greatly increasing the amount actually paid out each year for medical care and fake medicine. The best investment any community can make, in terms of cold-blooded dollars and cents, is in public health, especially in preventive medicine. If we were really applying to the entire population all the medical knowledge we now possess, the average expectation of life probably would be closer to seventy than sixty.

Here are three good ways to make money by the billions in a poverty-stricken world and to make normal men and women out of thousands we now are maintaining in illness and idleness at tremendous cost. The criminal is often sociopathic just as the mental case is often psychopathic. Both classes contain many thousands who can be cured by psychosocial therapy just as many formerly regarded as "hopeless" are now being cured by medicine and surgery.

We practically have eliminated half a dozen contagious diseases. We could almost wipe out tuberculosis and veneral disease in a generation. We could cut the infant death rate in half. We could greatly reduce middle-life heart disease death by proper diagnosis and treatment of child heart ailments and by teaching adult heart cases how to live with their malady. We could prevent most mental illness and criminality by proper training in childhood and youth and by giving all our people a decent standard of living which we are now technologically able to do.

We could add twenty to twenty-five billions to the cash income of the nation by applying the knowledge we now have in these three fields alone. There would be still greater indirect economic gains and enormous intangible social gains.

We seem to be suffering from a national psychosis akin to Freud's Death Wish. "National neurosis" is more accurate since we are conscious of our condition and are under constant worry, anxiety, and strain because of it. We ~~also~~ constantly indulge in irrational and maladjustive behavior with reference to mental and physical health and crime, and perhaps, ~~by transfer~~, in many other phases of our collective life. If we would devote one tenth of the time, intelligence, and wealth to the solution of these three problems that we now are using to kill and exploit each other, the Genus Homo Sap might become a fairly sapient fellow in a generation. At present, the Ironic Gods must be getting a bellyful of lusty laughter at the insane antics of Man in the Iron Age. This is a nice question: Will man become Socially Intelligent before he becomes extinct? If you are more optimistic than I, you may say the Postwar World will answer "Yes!"

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